

# **SCHOOL OF AGRICULTURE AND CONSUMER SCIENCES**

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MAJOR: Biological Science  
DEGREE: Doctor of Philosophy (Ph.D.)  
MAJOR: Agricultural Sciences  
DEGREE: Master of Science (M.S.)

## **CONCENTRATIONS:**

- I. Agribusiness
- II. Agricultural
- III. Animal
- IV. Plant Science

Education  
Science

## **OBJECTIVES**

The program in Agricultural Sciences is designed to:

- 1. Prepare research scholars in the increasingly complex scientific field of agriculture.**
- 2. Prepare scholars for rewarding careers in government and the agricultural industry.**
- 3. Prepare scholars for leadership roles in professional agriculture.**
- 4. Prepare scholars for further training in doctoral programs.**
- 5. Provide advanced training in agricultural education for graduates working in secondary schools and vocational agriculture.**

The Master of Science in Agricultural Sciences is offered with four concentrations: Agribusiness, Agricultural Education, Animal Science, and Plant Science. The degree requires a minimum of twenty-six (26) credit hours of course work and a thesis (4) credit hours. The candidate for the degree must complete twelve (12) credit hours of core courses: AGSC 506, AGSC 511, AGSC 512, AGSC 561-562; twelve (12) credit hours minimum of required courses in the selected concentration; and six (6) hours maximum of electives. These courses must be approved by the advisor and department head.

The Ph.D. in Biological Sciences is an interdepartmental degree program offered by the Department of Biological Sciences in the College of Arts and Sciences and the Department of Agricultural Sciences in the School of Agriculture and Consumer Sciences. Admissions procedures for the Ph.D. program are outlined under the Department of Biological Sciences. The major advisor will be appointed by the department offering the student's primary emphasis. Course descriptions are listed under the respective departments.

MAJOR: Agricultural Sciences  
DEGREE: MASTER OF SCIENCE (M.S.)  
CONCENTRATIONS:

Agribusiness, Agricultural Education, Animal Science,  
Plant Science

## **Admission Requirements: M.S. Program**

Candidates must have the equivalent of the bachelor's degree with a major in one of the Agricultural Sciences and a minimum quality grade point average of 2.50 on a 4.00 point scale and a minimum score of 870 on the GRE (verbal and quantitative, or verbal, quantitative and subject), or 25 on the MAT for unconditional admission. An applicant with a bachelor's degree in areas other than the Agricultural Sciences may be recommended to the Graduate School for conditional admission and be required to take eighteen (18) credit hours of undergraduate prerequisite courses in the Agricultural disciplines: 6 hours from Animal Science, 6 from Plant Science and 6 from Agribusiness, or Agricultural Education. An applicant may also be recommended for conditional admission if he or she has a 2.25-2.49 GPA and a minimum pre-admission test score of 935 on the GRE or 32 on the MAT or 2.00-2.24 GPA and a minimum pre-admission test score of 1000 on the GRE or 39 on the MAT.

## **Program of Study/Admission to Candidacy: M.S. Program**

The degree candidate must file a program of study after completing at least nine semester hours of graduate credit, but before completing fifteen hours of graduate credit. The program lists the courses which will be used to satisfy degree requirements, as well as detailing how other requirements will be met. The student may later change the program of study with the written approval of the Department and the Graduate School.

When the candidate files the program of study, he or she must also apply for admission to candidacy. The candidate must have a grade point average of 3.0 or above to be eligible for admission to candidacy.

**Degree Requirements: M.S. Program**

**Thesis**

Each student must pass Research Methods (AGSC 511), must have a thesis guidance committee appointed, and must be advanced to candidacy before enrolling in Thesis Writing (AGSC 512).

The candidate must submit a thesis on a topic approved by the major advisor. Upon completion of the thesis, the candidate must satisfactorily pass an oral examination conducted by the Thesis Examination Committee.

**PROGRAMS OF STUDY**

**Core Courses, All Concentrations - 12 hrs.**

AGSC 506	Statistics for Res. Workers	3
AGSC 511	Research Methods	3
AGSC 512	Thesis Writing	4
AGSC 561-562	Seminar	1, 1

**CONCENTRATION I: AGRIBUSINESS REQUIRED COURSES - 12 HRS. MINIMUM**

AGSC 508	Agribusiness Management and Market Analysis	3
AGSC 509	Food and Fiber Industry Economics and Policy	3
AGSC 510	Environmental, Resource Economics and Management	3
AGSC 530	Decision-Making in Agribusiness	
AGSC 531	Appl. International Agricultural Trade and Marketing	3
AGSC 533	Agribusiness Strategy	3

**Electives - 6 hrs. minimum with the approval of the advisor and department head.**

BISE 502	Managerial Communication	3
BIS 637	Seminar in Information Systems	3
EC 620	Economic Development	3
MG 612	Seminar in Managerial Problems	3
MG 609	International Management	3
EC 611	Managerial Economics	3
MG 601	Organizational Theory	3
AGSC 504	Program Planning and Evaluation in Vocational Education	3
AGSC 505	Special Problems in Vocational Education	3
AGSC 515	Livestock Management	3
AGSC 518	Soil Classification	3

**CONCENTRATION II: AGRICULTURAL EDUCATION REQUIRED COURSES - 12 HRS. MINIMUM**

AGSC 501	Federal Relations to Vocational Education	3
AGSC 502	Occupational Studies in Vocational Education	3
AGSC 503	Organization and Vocational Education	3
AGSC 504	Program Planning and Evaluation in Vocational Education	3
AGSC 505	Special Problems in Vocational Education	3

**Electives - 6 hrs. maximum with the approval of the advisor and department head.**

AGSC 508	Agribusiness Management and Market Analysis	3
AGSC 509	Food and Fiber Industry	3
AGSC 510	Environmental Resource Economics	3
AGSC 514	Special Problems in Animal and Poultry Science	3
AGSC 515	Livestock Management	3
AGSC 522	Plant Growth Substances	3
AGSC 526	Soil and Plant Analysis	3
EDCI 526	Philosophy of Education	3
EDCI 527	Advanced Social Studies	3

PSY 543	Advanced Educational Psychology 3
<b>CONCENTRATION III: ANIMAL SCIENCE REQUIRED COURSES - 12 HRS. MINIMUM</b>	
AGSC 513	Animal Nutrition 3
AGSC 514	Special Problems in Animal and Poultry Science 3
AGSC 515	Livestock Management 3
AGSC 516	Animal Genetics and Breeding 3
AGSC 517	Advanced Poultry Production and Management 3
Electives - 6 hrs. maximum with the approval of the advisor and department head.	
AGSC 509	Food and Fiber Industry 3
AGSC 510	Environmental Resource Economics 3
AGSC 518	Soil Classification 3
AGSC 522	Plant Growth Substances 3
AGSC 526	Soil and Plant Analysis 3
<b>CONCENTRATION IV: PLANT SCIENCE REQUIRED COURSES - 12 HRS. MINIMUM</b>	
AGSC 518	Soil Classification 3
AGSC 519	Plant Breeding 3
AGSC 522	Plant Growth Substances 3
AGSC 523	Advanced Propagation of Horticultural Plants 3
AGSC 524	Advanced Pomology 3
AGSC 526	Soil and Plant Analysis 3
Electives - 6 hrs. maximum with the approval of the advisor and department head.	
AGSC 509	Food and Fiber Industry 3
AGSC 510	Environmental Resource Economics 3
AGSC 513	Animal Nutrition 3
AGSC 515	Livestock Management 3
AGSC 516	Animal Genetics and Breeding 3
MAJOR: Biological Science	
DEGREE: DOCTOR OF PHILOSOPHY (Ph.D.)	

Admission Requirements: Ph.D. Program

**See admission requirements under Ph.D. Program - Department of Biological Sciences.**

Program of Study: Ph.D. Program

The degree candidate must file a program of study after completing nine semester hours of graduate work, but before completing fifteen hours of graduate work. The program lists the courses which will be used to satisfy degree requirements, as well as detailing how other requirements will be met. The student may later change the program of study with the written approval of the Department and the Graduate School.

Admission to Candidacy: Ph.D. Program

The student must apply for admission to candidacy after completing the 23-hour core of required courses (See Degree Requirements: Ph.D. Program, below.) With an average of B (3.0) or better, passing the comprehensive examination, and gaining approval of the dissertation proposal.

Degree Requirements: Ph.D. Program

Degree candidates must complete the core of required graduate courses (24 hours) with a grade of B or better in each course, pass the comprehensive examination, and gain approval of their dissertation proposal prior to obtaining admission to candidacy for the doctoral degree. After gaining admission to candidacy the student must complete an approved curriculum (23 hours minimum of electives set by the student's research advisory committee), enroll in Graduate Seminar (BIO 501, 502) or the Seminar in Biology every semester (BIO 701, 702), complete a dissertation (24 hours), and successfully defend the dissertation prior to gaining the Ph.D. degree.

Required Courses: 24 Hours

To be completed prior to Admission to Candidacy

BIO 510	Literature and Methods in Research 3
BIO 518	Cell Biology 3
BIO 610	Frontiers in Molecular Science 3
BIO 712	Molecular Biology 3
CHEM 541, 542	Advanced Biochemistry I, II 6
CHEM 560	Spectroscopic Methods in Chemistry 3
STAT 521	Statistical Methods I 3

After Admission to Candidacy: 51 Hours

Electives	23
BIO, 501, 502	Graduate Seminar I, II 1, 1
BIO 701, 702	Seminar in Biology I, II 1, 1
BIO 811	Dissertation Research 24
Graduate Elective Courses	
AGSC 516	Animal Genetics and Breeding 3
AGSC 519	Plant Breeding 3
AGSC 701	Advancements In Agricultural Biotechnology 3
AGSC 702	Economic, Regulatory and Ethical 3
AGSC 703	Issues in Biotechnology Gene Expression and Regulation In 3
AGSC 704	Higher Plants Plant Tissue Culture Methods and 3
AGSC 705	Applications Biotechnology in Animal Reproduction 3
AGSC 706	Advanced Soil Technology 3
AGSC 707	Molecular Genetics Ecology 3

#### COURSE DESCRIPTION

*AGSC 501. FEDERAL RELATIONS TO VOCATIONAL EDUCATION. (3) The historical development of legislative efforts toward the encouragement of a national structure of vocational education, educational and societal needs pertinent to legislative consideration; program development resulting from legislative guidelines.*

*AGSC 502. OCCUPATIONAL STUDIES IN VOCATIONAL EDUCATION (AGRICULTURE). (3) Study of procedures and practices for determining manpower needs; analysis of occupational clusters; study of identification and development of manpower sources.*

*AGSC 503. ORGANIZATION AND MANAGEMENT OF VOCATIONAL EDUCATION PROGRAMS. (3) Study of the organization of vocational and occupational programs; study of principles and concepts of program management; study of the techniques and procedures for program development.*

*AGSC 504. PROGRAM PLANNING AND EVALUATION IN VOCATIONAL EDUCATION. (3) Concepts and principles of planning vocational and technical programs at the local, regional, and state level; utilization of advisory councils and citizen committees; study of the administrative structure and legislative mandates, principles and techniques of program evaluation.*

*AGSC 505. SPECIAL PROBLEMS IN VOCATIONAL EDUCATION. (3) Students will be allowed to select a problem of interest, conduct an exhaustive literature search and present findings in written form. Discussion of progress will prevail during class periods.*

*AGSC 506. STATISTICS FOR RESEARCH WORKERS. (3) Training and skills in research design, analyzing data, presentation of data, and drawing conclusions, with special emphasis on descriptive inferences.*

*AGSC 508. AGRIBUSINESS MANAGEMENT AND MARKET ANALYSIS. (3) Introduction to and growth of the U.S. agribusiness industry, its scope and composition. Evolution and composition of basic managerial principles, organization, operation, and administration of agribusiness firms especially under situation of risk and uncertainty. Managerial Methodology Application of economic theory and Statistical methods, the analysis of prices, and marketing of agribusiness products.*

*AGSC 509. FOOD AND FIBER INDUSTRY: ECONOMICS & POLICY. (3) The economics of production, competition, markets, and policy for the food and fiber sector of*

*the economy. While the course stresses functional relationships and theoretical principles, descriptive material is included to enhance one's understanding of current problems and the interrelationships between agricultural and general economy, identification of relevant issues, review of criteria for evaluating program development of policies.*

*AGSC 510. ENVIRONMENTAL, RESOURCE ECONOMICS AND MANAGEMENT. (3) The course analyzes major environmental and resource issues in relation to operations of agribusinesses using economic principles and alternative management scenarios. Market and non-market approaches to valuation of environmental and natural resources will be discussed in conjunction with the regulatory framework and management institutions.*

*AGSC 511. RESEARCH METHODS. (3) The objectives of this course are: (1) to develop an understanding of research philosophies, methods, and procedures; (2) to gain experience in developing and designing research projects, organizing and analyzing research data.*

*AGSC 512. THESIS WRITING. (4) This course is designed to provide instruction that will enable the student to adequately prepare a thesis from his or her on-going thesis research under the direction of the major advisor and guidance committee. The format of the thesis must conform to that of the subject matter area and the requirements of the Graduate School.*

*AGSC 513. ANIMAL NUTRITION. (3) Devoted to the study of nutrients and their metabolism; studies of recent developments in animal nutrition, experimental procedures and application in commercial feeding.*

*AGSC 514. SPECIAL PROBLEMS IN ANIMAL AND POULTRY SCIENCE. (3) Students will be allowed to select a problem of interest, conduct an exhaustive literature search and present findings in written form. Discussions on progress will prevail during class periods.*

*AGSC 515. LIVESTOCK MANAGEMENT. (3) Provides an opportunity for the student to receive advanced training in the care and management of purebred herds, commercial herds, and herd development.*

*AGSC 516. ANIMAL GENETICS AND BREEDING. (3) A study of the principles of genetics with emphasis on breed improvement involving change of gene frequency, role of selection, selection index, importance of pedigree and methods of estimating heritability.*

*AGSC 517. ADVANCED POULTRY PRODUCTION AND MANAGEMENT. (3) Devoted to studying the principles and current practices in production, management and marketing of eggs, broilers, and turkeys; recognition of field problems, and how to solve such problems economically.*

*AGSC 518. SOIL CLASSIFICATION. (3) A study of the basis of soil classification, genesis and morphology of zonal soils of the United States. Emphasis placed on the important series of Tennessee. Prerequisites: AGSC 220, 423. Two lectures and one laboratory.*

*AGSC 519. PLANT BREEDING. (3) A study of the methods, principles and results of plant improvement work, hereditary variation and the general principles of plant breeding. Prerequisite: AGSC 120. Three lectures.*

AGSC 522. *PLANT GROWTH SUBSTANCES*. (3) *A general study of the organic substances which affect plant growth and development. Special emphasis will be placed on the auxins and cytokinins.*

AGSC 523. *ADVANCED PROPAGATION OF HORTICULTURAL PLANTS*. (3) *A study of the methods of propagating horticultural plants, including seedage, cuttage, and grafting of both economic and ornamental plants. Two lectures and one laboratory period.*

AGSC 524. *ADVANCED POMOLOGY*. (3) *A study of the development and performance of fruit plants as influenced by inheritance and environment. Two field trips required. Two lectures and one laboratory period.*

AGSC 526. *SOIL AND PLANT ANALYSIS*. (3) *Fundamental principles involved in analyzing soils and plants. Current techniques and methods of interpretation of soil testing and plant analysis.*

AGSC 530. *DECISION-MAKING IN AGRIBUSINESS: QUANTITATIVE APPLICATIONS*. (3) *This course develops expertise in quantitative problem-solving techniques necessary for decision-making in agribusiness with extensive use of computers. Introduction to the concepts and methods of applying econometric analyses to problems of economic research. Emphasis will be placed on the formulation and solution of business problems using selected quantitative tools such as linear programming, simulation, game theory, and inventory models.*

AGSC 531. *INTERNATIONAL AGRICULTURAL TRADE AND MARKETING*. (3) *The course emphasizes economic development, trade theory, and its application to agricultural trade. Review of the fundamental trade theory, changing structure of international trade markets, U.S. trade policies for agriculture, and the role of international commodity trading agreement.*

AGSC 533. *AGRIBUSINESS STRATEGY*. (3) *The course is designed to enhance learning through presentations of case studies and analyses of relevant issues by students and guest speakers from agribusinesses. Topics to be covered include but are not limited to location of business, supply of inputs, and international marketing tools.*

AGSC 561-562. *GRADUATE SEMINAR IN AGRICULTURAL SCIENCES*. (1-1) *Critical review of current literature in Agricultural Sciences. Required of all M.S. graduate students.*

AGSC 701. *ADVANCEMENT IN AGRICULTURAL BIOTECHNOLOGY*. (3). *A review of recent advances in biotechnology in agriculture with emphasis on experimental techniques and application in improvement of livestock and crop production. Prerequisite: Animal and Plant Genetics (AS 301).*

AGSC 702. *ECONOMIC, REGULATORY AND ETHICAL ISSUES IN BIOTECHNOLOGY*. (3). *This course will analyze factors affecting the development of biotechnology using economic principles and discuss regulatory and ethical issues as they relate to plant and animal products and by-products. Prerequisites: At least 6 credits in economics courses, of which 3 credits should be in intermediate level economic theory.*

AGSC 703. *GENE EXPRESSION AND REGULATION IN HIGHER PLANTS*. (3). *A study of gene structure in higher plants, and gene expression and its regulation in plant growth development, morphogenesis, reproduction, response to environmental stress and*

defense mechanism. Special topics such as transposable elements, Arabidopsis, molecular plant breeding will be included. Prerequisites: AGSC 519 or BIO 511.  
AGSC 704. PLANT TISSUE CULTURE METHODS AND APPLICATIONS. (3). Emphasis on hands-on laboratory procedures. Application of tissue culture techniques for the improvement of economic plants will be emphasized. Prerequisite: An introductory course in botany and plant physiology.

AGSC 705. BIOTECHNOLOGY IN ANIMAL REPRODUCTION. (3). Discussion on the various advances in techniques used to enhance animal reproduction and livestock productivity. Basic concepts of mammalian reproductive function will be studied. However, students should have a working knowledge of reproductive physiology. Methods such as artificial insemination, embryo transfer, in vitro fertilization, and embryo manipulation will be covered. Topics will be viewed from basic and applied perspectives. A comprehensive review of current literature will be included as a part of all discussions. Laboratory time in connection with this course will provide hands-on experience with some practices associated with reproductive biology. Prerequisite: Previous course in Reproductive Physiology (3 hours).

AGSC 706. SOIL TECHNOLOGY. (3). Evaluation of soil utilizing most recent advances in physical-chemical properties, soil structure, metric potential, water management/conservation techniques, and irrigation systems and pollution abatement. Prerequisites: AGSC 220, 423; Basic Chemistry and Calculus.

AGSC 707. MOLECULAR GENETIC ECOLOGY. (3). This course will explore and explain the underlying sources of genetic variation in populations, how this variation can be detected and analyzed, and how to interpret observed variation. Also covered will be examples of the applications of molecular genetics in behavioral ecology and population genetics drawn from current literature. Emphasis will be placed on applying these principles in agricultural research. Prerequisites: Undergraduate or Graduate Genetics.

#### AGRICULTURAL SCIENCES FACULTY

Desh Duseja, Professor B.S., 1961, M.S., 1963, Punjab Agri. University, Ludhiana, Pb., India; Ph.D., 1972, Utah State University

Constantine L. Fenderson, Professor and Coordinator B.S., 1969, Tuskegee Institute; M.S., 1972, Ph.D., 1974, Michigan State University

Surendra Singh, Professor B.S., 1963, M.S., 1965, Agra University; Ph.D., 1972, Pennsylvania State University

Gearldean Johnson, Ed.D.,

Coordinator and Head

Office: 107 Frederick S. Humphries

Family and Consumer Sciences and

Nursing Education Complex

(615) 963-5601

MAJOR: FAMILY AND CONSUMER  
SCIENCES

DEGREE: MASTER OF ARTS IN  
EDUCATION (M.A.ED.)

#### OBJECTIVES

The learner will be able to:

1. Demonstrate excellence in instruction.
2. Make use of theoretical models in education and research.
3. Demonstrate sound professional beliefs.
4. Make intelligent use of resources in education and the instructional area.
5. Demonstrate ability to improve the quality and availability of community services which enrich family life.
6. Demonstrate competence in research.
7. Demonstrate an intellectual curiosity.
8. Empower consumer and families to take action on perennial problems confronting families.

The Department of Family and Consumer Sciences offers the Master of Arts in Education. The degree program is designed for those in or preparing for professional careers in teaching, supervision, administration, research and community service. Courses are

flexible to meet the needs of family and consumer sciences professionals working in formal or informal teaching positions in: nutrition and consumer education, Cooperative Extension, preschool, middle, junior and senior high schools, and post secondary institutions.

#### Admissions Requirements

In addition to requirements set forth by the Graduate School, students may have an undergraduate background in the area of family and consumer sciences (child development and family relationships, or early childhood education, or foods and nutrition/food management, or interior and fashion design, or clothing and textiles, or family and consumer sciences education). An applicant must pass one of two entrance tests (1) the Miller Analogies Test, or (2) the General Test of the Graduate Record Examination and have an undergraduate GPA of 2.5 or above. The minimum score on the Miller Analogies Test is 25; the minimum score on the Graduate Record Examination is 870 (combined verbal, quantitative and subject score). An applicant may also be recommended for conditional admission if he or she has a 2.25-2.49 GPA and a minimum pre-admission test score of 935 on the GRE or 32 on the MAT or 2.00-2.24 GPA and a minimum pre-admission test score of 1000 on the GRE or 39 on the MAT.

#### Admission to Candidacy

The candidate must be admitted to candidacy after completing at least nine hours of credit but less than fifteen hours (see Admissions, Regulations, Policies in this Catalog). A GPA of at least 3.0 is required for admission.

#### Degree Requirements

Candidates for the Master of Arts in Education (M.A.Ed.) degree must successfully complete a minimum of thirty-one (31) semester hours of course work including four (4) semester hours of thesis writing, nine (9) semester hours of professional education, twelve (12) semester hours of required courses in Family and Consumer Sciences Education; and six (6) semester hours of electives. The course sequence should be planned with the adviser.

#### PROGRAM OF STUDY

##### Thesis Requirements - 4 hrs.

FCS 512

Thesis Writing 4

##### Professional Education Core - 9 hrs.

FCS 511 or EDCI 511 Research and Statistics

3

EDCI 526

Philosophy of Education 3

PSY 543

Advanced Educational Psychology

3

##### Required Courses. Family and Consumer Sciences Education - 9 to 12 hrs.

FCS 501

Issues and Trends in Family and Consumer Sciences 3

FCS 502

Evaluation 3

FCS 503

Curriculum Planning and Programming

3

FCS 521

Analysis of Teaching 3

FCS 531

Workshop 3

FCS 532

Technology in Family and Consumer

Sciences

3

FCS 543

Occupational Family and Consumer

Sciences

3

FCS 573

Entrepreneurship in Family and Consumer

Sciences 3

FCS 640

Special Problems in Family and Consumer

Sciences 3

Required courses in Family and Consumer Sciences Education must be selected with the consent of the adviser.

Courses selected must include FCS 501 and 502.

##### \*Electives. 6 to 9 hrs. with the consent of the adviser

ECCD 532

Advanced Creative Activities 3

ECCD 560

Advanced Methods and Materials for Early

Childhood Education 3

ECCD 561

Newer Trends and Issues in Early Childhood

Education 3

ECCD 562

Advanced Child Development 3

ECCD 601

Theories of Child Development 3

NTR 531

Community Nutrition 3

NTR 533

Maternal and Child Nutrition 3

NTR 552

Foodsystem Management 3

NTR 553

Diet Therapy 3

NTR 581

Problems in Foods and Nutrition 3

HMG 519

Economic Problems and Welfare of

Families

3

HMG 533

Consumer Education in High School

3

\*3.0 hrs. of electives may be selected from other disciplines with the consent of the adviser.

COURSE DESCRIPTION

*FCS 501. ISSUES AND TRENDS IN FAMILY AND CONSUMER SCIENCES. (3) This course covers the identification, examination, and evaluation of critical issues, theories, trends, innovations, and developments in Family and Consumer Sciences.*

*FCS 502. EVALUATION. (3) Types of evaluation and models will be examined and the teacher will analyze the kind of problems evaluation raises and devise appropriate solutions. Emphasis will also be on the identification, construction, use, and interpretation of instruments for appraising cognitive, affective and psychomotor objectives.*

*FCS 503. CURRICULUM PLANNING AND PROGRAMMING. (3) This course includes the identification and consideration of major curriculum theories, models, and designs. Emphasis is on family and consumer sciences curriculum conceptualization and building.*

*FCS 511. RESEARCH. (3) This course is designed to introduce the student to different methods of conducting research as well as to prepare the student for planning an original piece of research and develop a research proposal for the research. A critical analysis is made of various types of research and the various manuals of acceptable styles for writing. Elementary statistics, analysis, and interpretation or data are included.*

*FCS 512. THESIS WRITING. (4) This course involves the writing of a thesis. The statement of the research problem, review of related literature, the design of the study, the collection and analysis of data, and conclusions are emphasized.*

*FCS 521. ANALYSIS OF TEACHING. (3) Students are provided the opportunity to examine teaching strategies. The course also includes the description and classification of verbal and nonverbal classroom behavior.*

*FCS 531. WORKSHOP. (3) This course is designed for students to apply theoretical principles of knowledge and discipline. Family and Consumer Sciences professionals are provided the opportunity to update or gain needed skills related to a problem or issue in Family and Consumer Sciences.*

*FCS 532. TECHNOLOGY IN FAMILY AND CONSUMER SCIENCES. (3) This workshop is designed to help the family consumer sciences professionals explore the impact of computers and technology on society, family, family and consumer sciences programs, and the school. How the computer developed and the implications for the future, how computers work, and selecting and using home computers are important topics covered in the course. In addition, participants will have the opportunity to gain hands-on experience with the computer, review and evaluate computer hardware and software packages, and plan programs that incorporate technology and computers.*

*FCS 543. OCCUPATIONAL FAMILY AND CONSUMER SCIENCES. (3) This course focuses on theory, philosophy, legislative background, program development, and research in occupational Family and Consumer Sciences, career and technical education.*

*FCS 558. CHILD CARE OCCUPATIONAL INTERNSHIP. (2) Students are involved in observation and on-the-job work experience in industry-related positions of child care.*

*FCS 560. FOOD SERVICES OCCUPATIONAL INTERNSHIP. (2) Students are involved in observation and on-the-job work experience in industry-related positions in food services.*

*FCS 573. ENTREPRENEURSHIP IN FAMILY AND CONSUMER SCIENCES. (3) The course is designed to assist educators with incorporating entrepreneurship into Family and Consumer Sciences programs in a variety of education settings. Emphasis is also placed on developing competencies for operating a business using Family and Consumer Sciences related skills.*

*FCS 640. SPECIAL PROBLEMS IN FAMILY AND CONSUMER SCIENCES. (3) An individually directed study or investigation of special problems of particular interest to the student is conducted.*

*ECCD 532. ADVANCED CREATIVE ACTIVITIES. (3) The focus is on the creative awareness of one's environment-understanding of each child's level of thinking and the questioning mind as goals toward which teachers should strive for all children. The philosophies of Jean Piaget and Paul Torrance are incorporated in art, music and movement, language arts, and science. Projects are required.*

*ECCD 560. ADVANCED METHODS AND MATERIALS FOR EARLY CHILDHOOD EDUCATION. (3) The methods of teaching the subject matter areas, such as science, mathematics, social studies, art and music, for the young child are analyzed and discussed. Students plan by stating objectives and activities to implement these objectives.*

*ECCD 561. NEWER TRENDS AND ISSUES IN EARLY CHILDHOOD EDUCATION. (3) Recent developments in the field of early childhood education, current theoretical bases for programs, and new directions required by society today are analyzed. The practical implications of these developments and directions are discussed. Students become knowledgeable about newer trends and issues in the United States and other parts of the world.*

*ECCD 562. ADVANCED CHILD DEVELOPMENT. (3) The development of the child from birth through middle childhood is analyzed. Emphasis is put on recent research findings in child rearing practices. Students will be able to comprehend in detail the needs of children they will be working with in the classroom or at home.*

*ECCD 601. THEORIES OF CHILD DEVELOPMENT. (3) Basic theories of child development are analyzed in this course. The practical uses of these theories in teaching are discussed. Students develop a personal philosophy of education derived from a theory or a combination of theories.*

*NTR 531. COMMUNITY NUTRITION. (3) This is a course covering nutrition problems and practices in the community, including nutrition programs of the local, state, and federal agencies, and the preparation of materials for community nutrition programs. Prerequisite: a nutrition course.*

*NTR 533. MATERNAL AND CHILD NUTRITION. (3) This course is an advanced study of nutrition as it relates to children from prenatal life through adolescence.*

*NTR 552. FOOD SYSTEMS MANAGEMENT. (3) This advanced course in food systems administration concentrates on the special issues of concern to food service managers, including computer applications and program selection, cost control, personnel selection, training and supervision, and legal aspects of food service. Each student also chooses a special topic for further investigation.*

*NTR 553. DIET THERAPY. (3) This course includes study of the modifications of the normal diet in treatment of disease with emphasis on application. Prerequisites: Advanced Nutrition, Biochemistry, Anatomy and Physiology.*

*NTR 581. PROBLEMS IN FOODS AND NUTRITION. (3) This course is designed for individually or group directed study and investigation involving techniques used in foods and nutrition research, and investigation of current topics of interest in the field.*

*HMG 519. ECONOMIC PROBLEMS AND WELFARE OF FAMILIES. (3) A study is made of some of the factors related to changes in the economic welfare of families in America. Emphasis is placed on distribution, national income, prices, and specialization as they affect the family income.*

*HMG 553. CONSUMER EDUCATION IN THE HIGH SCHOOL. (3) New and innovative techniques in consumer education for youth below the college level are examined in this class.*

**FAMILY AND CONSUMER SCIENCES FACULTY**

Sandria Godwin, Associate Professor

B.S., 1971. M.S., 1973. Ph.D., 1981, Kansas State University

Geardean Johnson, Professor and Head

B.S., 1966. Tennessee State University; M.S., 1970, Ed.D., 1975, University of Tennessee/Knoxville

Beth Quick, Assistant Professor

B.S., 1989, M.Ed., 1990, Samford University; Ed.D., 1996, Peabody College of Vanderbilt University

Troy Wakefield, Professor and Dean

B.S., 1970. Tennessee State University; M.S., 1973. Ph.D., 1979, University of Tennessee/Knoxville