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## **Nutrition facts**

Theresa Faye Kiel

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**Northern Illinois University**

**Nutrition Facts**

**A thesis submitted to the  
University Honors Program  
in Partial Fulfillment of  
the requirements of the  
Baccalaureate Degree  
with Upper Division Honors  
Department of Visual and  
Performing Arts.**

**By Theresa Kiel**

**DeKalb, Illinois**

**May 2008**

## Upper Division Honors (Phase II)

To graduate with **Upper Division Honors**, a student must complete a minimum of 12 credit hours of Honors courses at the 300- or 400-level, including an Honors Seminar and a senior independent study project (Capstone). The overall cumulative GPA must be at least 3.2 and the GPA in honors courses must be at least 3.2. Students must be members of the University Honors Program for a minimum of three semesters.

**Honors Seminars** are upper level courses, designated by the Honors Program, which must be taken outside the major area of study. These seminars are designed to sharpen analytical skills, enhance reasoning power and strengthen aesthetic awareness. Honors study abroad may be substituted for the Honors Seminar if the course taken abroad is approved by both the university and the NIU department in which the student would normally take the class, is not the student's major, and received separate Honors approval. All approvals must be obtained before the course is taken.

**Capstones** are independent study projects that allow a student to investigate a subject of particular interest, to participate in the research of the project advisor, or to undertake a creative effort in the major field of study. As independent studies, all Capstones must be a minimum of three credit hours and must be a one-on-one project with a professor who is the "faculty capstone advisor." Depending on the discipline, the outcome may be a senior thesis, a research paper, an engineering report, a video tape, a computer

program, an artistic creation, or any other work agreed on by the faculty capstone advisor, the Honors director, and the student. When the capstone is not a thesis, paper, or written report, a written paper that describes and discusses the capstone itself must accompany the capstone. The scope of this paper will be determined during capstone advising.

Capstone projects may be in the student's major area, or in a related area, and frequently will fulfill departmental Honors requirements as well as those of the University Honors Program. The independent study effort may extend over several semesters and does not have to be carried out during the semester of registration for credit. Students in their junior year are urged to discuss possible capstone projects with the director to allow adequate time for thorough completion of the work. Students are required to complete capstone advising with the University Honors Program Director, have a capstone proposal accepted, and have a completed capstone accepted by Honors in order to obtain University Honors status for the capstone project.

### Goals of the University Honors Capstone

- To provide the students with a "capstone" experience
- To deliver a senior thesis/writing experience
- To require the student to carry out an original work of significance
- To allow a student to develop individual initiative separate and independent from class work
- To help the student learn how to plan a thesis, dissertation, research, project, or artistic experience
- To allow a student a unique opportunity to have a one-on-one collaboration with a true expert in a field under study by the student
- To give a student an opportunity to explore or study a topic in depth
- To give a student control over a project or thesis of importance

# Nutrition Facts

## SUMMARY OF HONORS CAPSTONE

The purpose of my nutrition book is to provide a resource that can be used for measurements of serving sizes. It is a pictorial form of serving sizes that presents a variety of foods. The main content is mostly pictorial therefore; people of many languages and levels of literacy can understand it. Almost everyone would find this book useful, especially: nutritionists, people who are dieting, health professionals, or anyone who cooks. The main idea is to make people aware of the foods they are eating and in what quantities they should be eating them. Food groups are not combined in this book. Instead, I chose to break the foods down into basic components, which are commonly consumed. For example, there is not a measurement for pizza in the book, but by combining the serving sizes of the main ingredients the reader can understand how much one piece of pizza is worth and how many servings it contains. Looking at the basics of food before preparation into a meal gives the viewer an awareness of what combinations of foods make up meals from fast food to fine dining restaurants. I edited out the unnecessary bits of information and simplified the food to something universal that everyone can relate to.

## RESEARCH

My project was motivated by a genuine concern with Americas' struggle with weight control. Nationally, we are a very unfit society, due in large part to a lack of education about proper serving sizes. In my own experience, I know how confusing it is to try to determine exactly what a proper serving size is. To my knowledge, there are no other resources similar to the one that I created that are as simple to use and understand. I looked at what tools are currently out in the market for food measurements. There are 3D models that indicate portion sizes, and 3D measuring cups. While these models are a positive to this technique for measurement since serving sized can be seen in a 3D form they are expensive, take up space. Measuring cups are the most effective form of measurement for nutrition; they are inexpensive and give exact measurements but consumers do not always use them or do not have the all serving sizes memorized. I was able to find an artistic outlet for my frustrations and anxieties with the lack of knowledge of proportion sizes. This nutrition book was a way for me to express my own opinion and concerns, while involving others and hopefully motivating them to explore this area in greater depth. I feel my nutrition book will definitely have an impact on consumers. When purchasing food either to prepare for themselves or items that are prepared for them, this resource can help the consumer to use only what they need according to serving recommendations. With the use of visuals, management of our food system will develop.

## CHALLENGES OF THE DESIGN

I am basing measurements within this book on the USDA My Pyramid standards. The United States Department of Agriculture, My Pyramid standard measurement is ounces or cups. The most challenging objects to render in one dimension, outline format, were liquids and measurements of ounces. When an object like a piece of chicken is measured in an ounce, it is not flat; it has a third dimension. Regarding the accuracy of this book, the third dimension of measurement is where this is limited. It would be extremely difficult to accurately display an object of measure of a third dimensional manner in a one dimension manner. Dry ingredient measurements were pretty straight forward, because I was able to spread them out into a one dimensional flat surface area. The diameters of dry ingredients laid flat in a circle, is similar in shape to a standard cup size. Throughout the book there is a pattern of dimensions of foods with equal measurements. This was a trend that I expected but was still surprised to see. Liquid foods were the most challenging to identify in a pictorial way. For example, when measuring milk, I used a container to show one serving of milk. The consumer must assume that the packaging is not consumed and that the container is filled to the top with the liquid. Rendering liquids and the third dimension of foods were the hardest to identify.

A particular challenge I faced for this project presented itself with my first proof of a book. I did not use typography to label foods; instead, they were only identified by shape. With similar shaped foods, like apples and nectarines the problem of misidentification had to be resolved. One solution was to type the name of the food next to the shape of the food. The second solution would have been to use colors to identify the food. The third solution would be to use more identifiable marks inside of the outlined food. I chose to name each type of food to avoid confusion. While colors could have been used for such items like oranges, there are many foods that come in a variety of colors. For example with the apple, consumers can choose red,

green, yellow, green-yellow, or a combination of all. I did not want the consumer to see one color in the book and interpret the color literally. Any color of apple is acceptable; it does not affect the serving size. The hand drawn images give this book an organic feeling. That impression relates to making a craft. This is also closely related to cooking, a handmade process. The imperfections reveal a real beauty that can be found in all foods. As an identifying factor, some foods like kiwi, avocado, and a cookie were given marks inside their outlines to increase recognizability.

Even though my book is more effective in ways it does have limitations. A limit to my nutrition book is there is no consideration to the quality of food products and how they affect nutritional values. A serving size could be greatly affected by a method of preparation, method of growth as in the case of organic and non-organic, low fat, or high fiber. Each individual has a vast choice of foods including whole grain products, skim or non-fat, and fatty or lean cuts of meat. Food preparation is not taken into consideration within this book. Methods of cooking that are lower in fat such as broiling, grilling, and roasting will also impact the healthful benefits of the consumer's food choices. Many variable factors must be taken into consideration, especially factors that cannot easily be seen like salt, sugar, and sugar substitutes, which are in many of our food products. With this book as a resource, consumers will definitely have a better estimation of the proper serving sizes and portions that they should be eating.

## HISTORY

This book promotes the use of the dietary guidelines from the USDA "My Pyramid." The correct use of this book promotes wellness. My hopes are that people will go and pursue more of their own research after reviewing my book. Nutrition and fitness is an ever changing field and new research is essential to stay current with the latest nutritional recommendations. Food and eating have always been around, because they are basic needs of life. According to the USDA, nutritional guidelines started in the 1940s. Prompted by President Franklin Roosevelt, in 1941 the USDA came up with Recommended Dietary Allowances (RDAs) for Americans to follow. RDAs specified caloric intake, as well as essential nutrients, with the "Basic Seven," which is equivalent to "My Pyramid." The "Basic Seven" was designed around the food supply shortages during World War II. Following those guidelines was unachievable to most, so it was changed to four food groups: milk, meats, fruits and vegetables, and grain. In the 1950s, departments of nutrition began to appear in universities. During the late 1970s, the USDA added fats, sweets and alcoholic beverages for people to consume in moderation. In 1988, the rise in heart disease prompted the creation of a graphic to represent the food groups. "The Food Guide Pyramid" was finally released in 1992. Visuals were developed facts of the "Food Guide Pyramid" could be communicated easily. Yet, Americans remain confused about healthy eating. A 1996 telephone survey done by the USDA found that over forty percent of people agreed with the statement that "there are so many recommendations about healthy ways to eat, it's hard to know what to believe" (MyPyramid.gov.) Because of the emergence of so many diets and programs, it is challenging for Americans to know just what to believe. It seems as if the information we hear is changing every day.



## SERVING SIZE KNOWLEDGE

Social situations we are placed in everyday force people to eat more. Candy dishes on secretary desks, the homemade cake someone brings to share, when the office orders lunch, or getting hungry mid day and buying a vending machine snack. The American economy has adapted to promote unhealthy lifestyles. Unhealthy luxuries we enjoy are delivery, vending machines, and larger quantity food dishes. Why do employers promote lunch meetings and bringing food to the office? It is simple: food makes people happy. Happy workers are expected to produce more efficiently. Another problem some consumers may have is eating to heal. Depression may cause people to self medicate with food. Food may also act as a medication for stress relief. A common example is the boyfriend breaks up with the girl; she eats a carton of ice cream. But that situation is not usual in most cases. Most cases of overeating do not last one night. Comfort food is used for a long period of time, becoming a habit. Food is also used in times of joy such as weddings, parties, anniversaries, and new opportunities. If someone gets a raise the common response is to out to dinner to celebrate. Another situation where portion sizes are larger is during travel. Unless they plan ahead, most travelers eat out at places on road trips or when they arrive at your destination. Room service is also an option. Many of these are factors are affected by an unwillingness to make good nutrition choices. In social situations, the person consuming food has the choice to choose smaller portions. According to Nutritionist Elizabeth Brown, on an eight inch plate, half the plate should be vegetables, one quarter meat and one-quarter starch. Food is available at every conceivable location from gas stations to movie theaters, and portions are equally as plentiful no matter where you get them. Sixty percent of adults are overweight according to Brown (Nazario.) The bottom line: We eat too much food and the wrong kinds of food. One of the easiest ways to cut back on calories and lose weight is by monitoring servings in serving sizes. USDA suggested serving sizes are based on the amount of food people typically eat, which makes the serving sizes more realistic and easy to compare to similar foods. This may or may not be the serving amount you normally eat.

## SERVING SIZES

Food labels and packaging can be misleading. In my field of study, graphic design, designers are an integral part of the creation of the food labels. When images of food are enhanced and do not represent what is inside the box, is difficult for consumers to know for sure what they are getting. When packaging uses smell marks, swirls, and cartoon characters, the consumer is easily misled. Often times serving sizes are not reflected in the images that are presented on packaging, usually the image is enlarged to make it look more appetizing and attractive. It takes careful research on the part of the consumer to realize, for example, that a serving size of crackers may only be four or five crackers and not the twelve or fifteen that are shown on the box.

## PROCESS

When creating this book there were many questions that I asked myself in the process phase. Do the pages need to lie flat when opened? How many books will be produced? Will the book be mailed? Will the book need to be durable? Will there be a single or double sided printing? What is the budget for my project? What will be the fold of the paper, single sheet or French fold? For practicality I needed something that could be flipped through and quickly referenced. There is a need for pages that can be flipped through easily. The piece is black and white so that it can be reproduced easily. For the binding, I chose coil binding. The coil binding allows the book to be opened to a specific page while the consumer browses for the information they need. Coil binding is convenient for short run publications because of its low cost and quick production time. Coil binding allows for the book to lie flat. The size is 11" by 7", and it has a nice book composition and weight. With the coil binding the book can be held open as a spread or folded over itself like a spiral notebook for ease in holding the book upright. I used Helvetica ultra bold for my typography in my book. This typeface is used on nutrition labels, which will be recognizable by the reader. The images are organic, organized on a dynamic grid. I used static grid for the typography on each page. I organized the book on this kind of grid because I wanted to present the static information, nutrition facts, on a static grid and the organic information, the food outlines, on a dynamic grid. As a graphic designer it is important to consider the whole product, including the layout, size, printing ability, binding, type, and color.

## CONCLUSION

From the standpoint of a graphic designer, this project was about the whole experience, not just the product. One of the hardest things about this project was setting parameters for myself. When designers work with a client or a teacher, the parameters for a project, for the most part, are defined ahead of time. Since I was creating something new in a field that I had very little experience with, most of the parameters were defined on a daily basis. Planning ahead was unpredictable, and I had to be very flexible in regard to my original timeline. Having a forgiving attitude of not following the "timeline" benefited my project in a positive way. I feel my project evolved into something useful for a much broader audience than I had originally thought. Many consumers will benefit from utilizing my nutrition book as a guide to making healthy food choices.

BIBLIOGRAPHY  
FOR THE DESIGN RESEARCH

Jack Olson Gallery  
200 VISUAL ARTS BUILDING  
NORTHERN ILLINOIS UNIVERSITY  
DEKALB, ILLINOIS 60115

04.29.08 – 05.08.08

BFA Senior Show

Reception: Thursday, May 3

4:30 – 6:30PM

Exhibition of work by NIU School of Art students receiving a BFA degree with emphasis in ceramics, drawing, fiber, Illustration, metalwork and jewelry, painting, photography, printmaking, sculpture, time arts, and visual communication.

Gruen Gallery  
226 WEST SUPERIOR STREET  
CHICAGO, ILLINOIS 60610

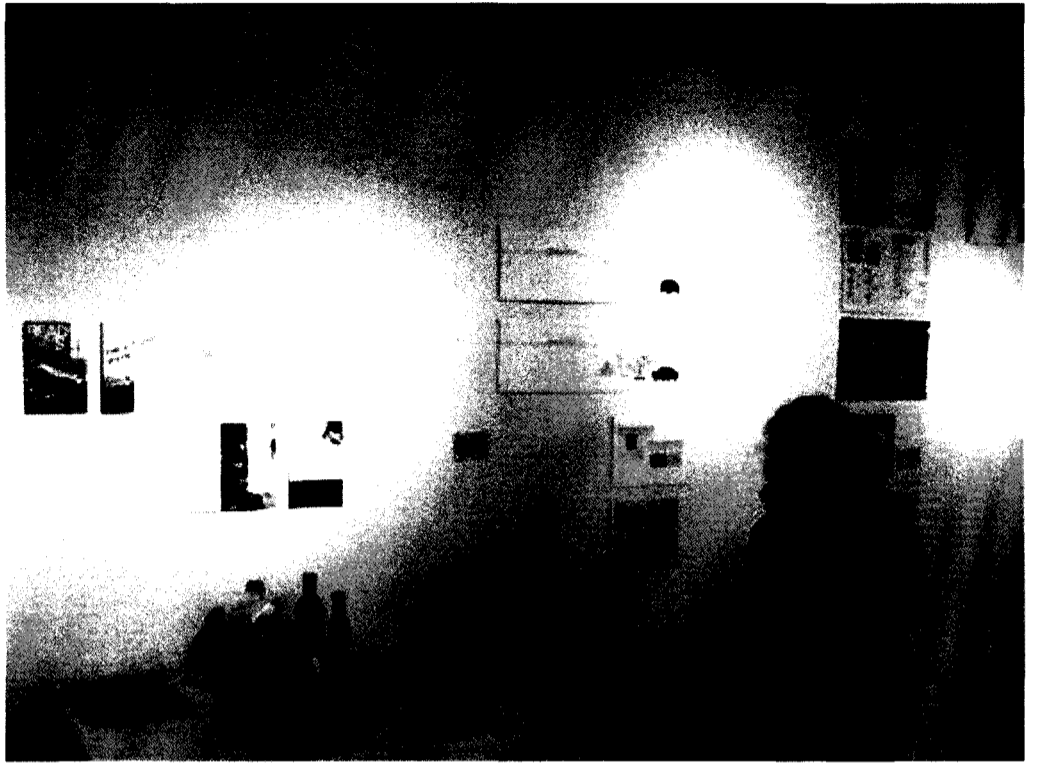
04.30.08

BFA Senior Show

Reception: Wednesday, April 30

5:30 – 8:30PM

Exhibition of work by NIU School of Art students receiving a BFA degree with emphasis visual communication.



## BIBLIOGRAPHY FOR THE DESIGN RESEARCH

### JOURNAL ARTICLES

Bethesda, M. "Just enough for you: about food portions." National Institute of Diabetes and Digestive and Kidney Diseases (2006.): 1–16.

"Weight control Information Network." WIN, Weight control Information Network. (January 2003).

### BOOK

Fahey, Thomas. *Fit and well*. New York, NY: McGraw Hill Companies, Inc, 2005.

Oakes, Michael E. *Bad foods : changing attitudes about what we eat*. New Brunswick, NJ: Transaction Publishers, 2004: 1 – 145.

Stewart, Hayden. "Let's eat out: Americans weigh taste, convenience and nutrition." U.S. Dept. of Agriculture, Economic Research Service. Washington, D.C, 2006). 1 – 10.

Whitney, Ellie. *Understanding nutrition*. Belmont, CA: Thomas Learning, Inc., 2005.

### INTERVIEW

Lulinski, Beth, Personal Interview. 815 753 0244. Instructor, NIU.

Nutrition Services, Personal Interview. 815 73 9416. NIU Student Recreation Center.

## VIDEO

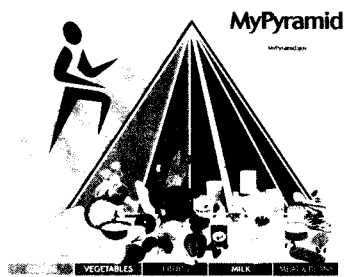
Nazario, Brunilda. Portion Sizes. November 2007. 199 – 2008 Medstar. Television.

The food guide pyramid / National Health Video. Calif. : Perf. Mary Donkersloot, Amy Barr. N.H.V, 1993. VHS.

## WEB

"MyPyramid.gov – United States Department of Agriculture – Home."  
United States Department of Agriculture. 11 Oct. 2007. <<http://www.mypyramid.gov/>>.





VEGETABLES	FRUIT	MILK	MEAT/BEANS
<p>Get at least 1 1/2 cups of vegetables a day.</p> <p>Get more dark green, red, orange, and legume vegetables. Get 1/2 cup of beans a day.</p> <p>Get at least 1/2 cup of fruit a day.</p> <p>Get more whole grains. Get more whole wheat, rye, and bran.</p> <p>Get more low-fat dairy products. Get more fat-free or low-fat milk, yogurt, and cheese.</p> <p>Get more lean meats and poultry. Get more fish, beans, and eggs.</p>	<p>Get a variety of fruit.</p> <p>Choose high fiber fruits like apples, pears, and citrus.</p> <p>Go easy on fruit juices.</p>	<p>Get a variety of milk.</p> <p>Choose low-fat or fat-free milk, yogurt, and cheese.</p> <p>Go easy on full-fat dairy products.</p>	<p>Choose lean meats like chicken, turkey, and fish.</p> <p>Choose low-fat dairy products.</p> <p>Choose whole grains.</p> <p>Choose fruits, vegetables, and nuts.</p>

### Making Sense of Serving Sizes

At the website [www.mypyramid.gov](http://www.mypyramid.gov) you are able to enter your age, gender, and activity level and receive an individual recommendation of how much food from each food group you should be eating. MyPyramid gives grain, meat, and bean recommendations in ounces, fruits and vegetable recommendations in cups, and milk recommendations in cups and ounces. There are times however, when you may not have a scale or measuring cup on hand. During these times, it is helpful to be able to visualize how much food is in an ounce or cup. The following are examples from each food group.

THE BREAD, CEREAL, RICE AND PASTA GROUP	
1 ounce or 1/2 cup cooked rice	is the size of a tennis ball, ice cream scoop
1 one ounce pancake	is the size of a CD
1 ounce or 1/2 cup cooked pasta	is the size of a cupcake wrapper full pasta
1 piece of cornbread (1 ounce)	is the size of a bar of soap
1 slice of bread (1 ounce)	is the size of an audiotape cassette tape
1 cup of cereal flakes (1 ounce)	is the size of a fist

THE VEGETABLE GROUP	
1 cup salad greens	is the size of a baseball or a fist
1 baked potato	is the size of a fist
3/4 cup tomato juice	is the size of a small Styrofoam cup
1/2 cup cooked broccoli	is the size of a scoop of ice cream or a light bulb
1/2 cup serving	is the size 6 asparagus spears, 7 or 8 baby carrots or carrot sticks or 1 ear of corn on the cob.

THE FRUIT GROUP	
1/2 cup of grapes (15 grapes)	is the size of a light bulb
1/2 cup of fresh fruit	is the size of 7 cotton balls
1 medium size fruit	is the size of a tennis ball or a fist
1 cup of cut-up fruit (2 servings)	is the size of a fist
1/4 cup raisins	is the size of a large egg

THE MILK, YOGURT and CHEESE GROUP	
1-1/2 ounces natural cheese	is the size of a 9-volt battery, 3 dominos
1 ounce processed cheese (1/2 serving)	is the size of a pair of dice or your thumb

THE MEAT, POULTRY, FISH, DRY BEANS, EGGS and NUTS GROUP	
2 tablespoons peanut butter-equal to 1 oz. of meat	is the size of a Ping-Pong ball
1 tablespoon peanut butter	is the size of a thumb tip*
3 ounces cooked meat, fish, poultry	is the size of a palm, a deck of cards or a cassette tape
3 ounces grilled/baked fish	is the size of a checkbook
3 ounces cooked chicken	is the size of a chicken leg and thigh or breast

FATS, OILS and SWEETS	
1 teaspoon butter, margarine	is the size of a fingertip
2 tablespoons salad dressing	is the size of a Ping-Pong ball

SNACK FOODS	
1 ounce of nuts or small candies	is the size of one handful
1 ounce chips or pretzels	is the size of two handfuls
1/2 cup of potato chips, crackers, or popcorn	is the size of one man's handful
1/3 cup of potato chips, crackers, or popcorn	is the size of one woman's handful

\* Note: hands and fingers vary from person to person! These are guides only.

### Get A Grip On Portions

- 1/2 cup**: Size of vegetable, fruit, fish or the palm of your hand. The size of a tennis ball.
- 1 cup**: About the size of a medium hot cereal due (1/2 a standard cereal bowl requires the size of a large bowl).
- 1 oz. cheese**: About the size of a computer floppy disk or 2 dominos.
- 1 teaspoon butter or peanut butter**: About the size of the tip half of your thumb.
- 1 oz. of nuts**: Fits in the palm of your hand.
- 2 oz. meat**: Small hotdog leg, 2 hot dogs, chicken or fish.
- 2 oz. meat**: About the size of a deck of playing cards or a standard envelope.
- 1 medium apple or orange**: The size of a tennis ball.
- 1 small banana**: About the size of an apple core.

### PYRAMID POWER

#### ACHIEVE AN OVERALL HEALTHY EATING PATTERN

The secret to good health is in your diet. Each food group has its own special benefits. Get the most from each food group by following the guidelines below. All foods can be part of a healthy eating pattern.

The Food Guide Pyramid serves as a reminder to eat a wide variety of foods from all food groups daily. It also provides helpful information about what you can build a healthy eating pattern.

**University Honors Program**

Capstone Approval Page

Capstone Title (print or type):

Nutrition Facts  
\_\_\_\_\_  
\_\_\_\_\_

Student Name (print or type):

Theresa Faye Kiel

Faculty Supervisor (print or type):

Aleksandra Giza

Faculty Approval Signature:

Aleksandra Giza 12/6/07

Department of (print or type):

Visual and Performing Arts

Date of Approval (print or type):

\_\_\_\_\_

HONORS THESIS ABSTRACT  
THESIS SUBMISSION FORM

AUTHOR: Theresa Faye Kiel

THESIS TITLE: Nutrition Facts

ADVISOR: Aleksandra Giza

ADVISOR'S DEPT: College of Visual  
and Performing Arts : Design

DISCIPLINE: BFA: Design  
Visual Communications

YEAR: 2008

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ABSTRACT (100 - 200 WORDS):

Signature Page

Theresa Faye Kiel  
Student Signature

  
2- 10 #

Request Approved:

ALEXSANDRA GIZA  
Printed Name of Faculty Capstone Advisor

Alexandra Giza  
Signature

9/11/07  
Date of Acceptance by Faculty Capstone Advisor

Rich Holly - acting  
Printed Name of Department Chairperson

Rich Holly for R.H.  
Signature

September 12, 2007  
Date of Acceptance by Chairperson

University Honors Program Director

Michael J. Marks  
Signature

1/14/07  
Date of Acceptance by Director

REQUEST FOR UNIVERSITY HONORS INDEPENDENT STUDY LEADING TO THE  
COMPLETION OF THE HONORS CAPSTONE PROJECT

COVER SHEET

Theresa Faye Kiel

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City, Zip

ART 490 H

Department and Course Number

[REDACTED]

Student Phone Number

FALL 2007

Semester of Registration

9/11/2007

Date of Request

May 2008

Graduation Date