School of Chemical Engineering
Honors Program Guide
2016-17

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Overview

Honors options are available for students who have demonstrated a strong academic ability and wish to conduct independent research with a faculty advisor on a research project. This research should last a minimum of two semesters (typically fall & spring semester senior year). Students may also opt to conduct research for three semesters (spring semester junior year, fall & spring semester senior year) depending on the research project. Students pursuing any of the following honors options must write, submit, and defend a B.S. Honors Thesis.

Honors Options available to students in the School of Chemical Engineering:

- **Honors College** *(effective for those students entering Fall 2013 or after)*
- **Chemical Engineering Departmental Honors**

Honors Options

Honors College Option

The Honors College selection process for beginning students is by invitation only. Current students can apply to the Honors College if they have a cumulative Purdue GPA of a 3.5 or above and four semester of study remaining before graduation.

Curriculum:

- 24 credits of honors coursework
  - Specific HONR courses (5 credits)
    - 2 credits of HONR 19901 & 19902
    - 3 credits of additional HONR course(s)
  - Elective honors courses (19 credits)
    - HONR courses if not meeting specific HONOR course credits
    - Courses with an honors designation
    - Courses taken with an honors contract
    - Graduate level courses that are not required for your major
- A thesis or scholarly project

Students in the Honors College must have a cumulative GPA of 3.5 or higher and have completed all Honors College requirements to graduate with honors. Students whose cumulative GPA drops below a 3.5 for two consecutive semesters will no longer have priority registration, be provided with Honors College supplemental advising or be guaranteed the option of completing a thesis or scholarly work under faculty supervision. Honors College privileges will be reinstated if the student's cumulative GPA rises above a 3.5.

Chemical Engineering Departmental Honors Option

Students may apply for the Chemical Engineering Departmental Honors program after reaching an agreement with a faculty advisor on a research topic and the following requirements have been met:

- Must have a 3.5 overall GPA
- Must have completed the following courses with a grade of a B- or better on the first attempt in the course:

ENGL 10600	MA 26100	CHE 20500	CHE 37700
COM 11400	Math Selective I	CHE 21100	CHE 37800
PHYS 24100	Math Selective II	CHE 34800	

Note: Students may be accepted into the program prior to enrolling in the above courses upon approval from the faculty advisor and Head of the Chemical Engineering Honors Program. Acceptance will be contingent on earning a grade of a B or better in the untaken course.

Curriculum:

- CHE 49800: Undergraduate Thesis Research I
- CHE 49900: Undergraduate Thesis Research II
- CHE 54000: Transport Phenomena

Honors Courses

HONR Courses

To fulfill the honors diploma requirements, students must earn a total of 5 credits for specific HONR courses. Additional HONR courses may be taken to complete the Elective honors course requirements. The options for these interdisciplinary seminars change each semester. The current course offerings may be found on the Honors College site.

- HONR 199 courses are designed for first and second-year students only
- HONR 299 and 399 courses are open to all high ability students

The School of Chemical Engineering will accept HONR courses to fulfill general education elective credit towards the Chemical Engineering degree.

Honors Sections

Several schools/colleges offer honors sections of courses. These courses will be noted with "Honors" in the course title, or H next to the course number within the schedule of classes listed on My Purdue.

Contract Courses

An honors contract is available for students and faculty instructors to agree upon to incorporate an honors project into a regular, non-honors course to earn honors credit.

Deadline for Contracting a Course

The honors contract and form 23 must be submitted to the honors unit of the college offering the course by the Friday of the second week of classes.

Dropping a Contract

The honors contract cannot be dropped after the 9th week of the semester. At that point in time, students must either complete the honors project to receive a grade in the course or file an incomplete for the entire course.

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Honors Contract Form

Deadline: Friday of the 2nd week of classes

An honors contract is a binding agreement between a student and faculty member that enrolls a student in an honors version of a standard course. Students should expect to produce additional or alternative work, to produce high-quality work, and to meet regularly throughout the semester with their faculty instructor. Students may not undertake an honors contract with a graduate student instructor.

The course work assigned to a student with an honors contract contributes to the student's final course grade. When an application for an honors contract is submitted, the completed contract form must be accompanied by both the regular course syllabus and a revised syllabus showing the additional and/or alternative work assigned to the student, along with the deadlines for that work and the revised grading scheme for the course.

PLEASE NOTE: The honors contract enrolls a student in an honors course and therefore cannot be cancelled after the final deadline to modify a course. Failure to complete the contract will be reflected in the course grade.

Directions: Please supply the information requested below. Attach the standard course syllabus and a revised honors syllabus showing additional/alternative work and deadlines, along with the modified grading scale. The completed contract form must also be accompanied by a signed Registrar Form 23 (Schedule Revision Request).

Student: Please certify these statements by checking each box:

☐ I qualify for honors coursework at Purdue (3.0 G.P.A or above) ☐ I am working with a professor.

Honors Contract Course for (please circle one) FALL / SPRING / SUMMER semester, 20_____

Subject_____ Course Number_____ Section_____ CRN(s)_____

Student and Faculty: I hereby agree to the attached honors syllabus, grade scheme, and deadlines.

_____	_____
Student Signature	Faculty Signature
_____	_____
Student Name (please PRINT)	**Faculty Name** (please PRINT)
_____@purdue.edu	_____@purdue.edu
Student E-mail	Faculty E-mail
_____	(765)_____
Student Telephone No.	Faculty Telephone No.

_____

Honors Approval Signature Date

SUBMIT THIS FORM AND FORM 23—signed by student and faculty member—to the honors unit or honors representative of the college offering the course being contracted. (See back for locations by college.)

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College Honors Units

Please submit signed honors contract paperwork and Form 23 to the appropriate office:

College of Agriculture
Professor Marcos Fernandez, Associate Dean for Academic Affairs
Agricultural Education, Room 121

College of Education
Professor Teresa Doughty, Associate Dean for Academic Affairs
BRNG 6121

College of Engineering
Professor Eric Nauman, Director of Engineering Honors
Engineering Honors Office, Hampton Hall of Civil Engineering, G293

College of Health and Human Sciences
Jennifer Rosselot Wilkins, Academic Advisor and Student Program Specialist
Matthews Hall, Room 126

College of Krannert School of Management
Professor Charlene Sullivan, Associate Dean of Undergraduate Programs
KRAN 128

College of Liberal Arts
Professor Kristina Bross, Director of Liberal Arts Honors
CLA Honors Office, BRNG 1174

College of Pharmacy
Professor Holly Mason, Senior Associate Dean of Pharmacy
RHPH 104

College of Science
Ranae Wetli, Administrative Assistant to Associate Dean Minchella
MATH 931

College of Technology
James Mohler, Associate Dean for Academic Affairs & Diversity
KNOY 150

Veterinary Medicine
Professor Kathleen Salisbury, Associate Dean for Academic Affairs
Dean's Office, Lynn Hall

ALL CONTRACTS GO TO THE COLLEGE OFFERING THE COURSE BEING CONTRACTED

015 Contract paperwork is due at the end of the 2nd week of classes. Paperwork is processed within the college offering the course being contracted—not the Honors College or the home college of the student undertaking the contract.

There are two required forms:

1. The Honors Contract Form (available from advisors and the Honors College website)
2. Registrar Form 23 (available from advisors and the Office of the Registrar)

Honors contract process: step-by-step

1. Student approaches faculty instructor to request honors contract course. Faculty member is under no obligation to agree.

2. Student and faculty instructor decide upon honors elements and create honors syllabus, which must include specific assignments, deadlines, and grade scheme.

3. Student obtains: 1) the honors contract form; 2) form 23 from the student's advisor. Advisor must sign form 23 and write in the comment box, "H grade mode okay."

4. Student and faculty member complete the honors contract form and sign it. Faculty member also signs form 23.

5. Student submits signed honors contract form and signed form 23—along with both standard syllabus and honors syllabus—to the honors representative of the college offering the course. Deadline: Friday of the 2nd week of the semester.

6. Honors representative approves or denies contract. If denied, honors representative notifies student and faculty supervisor. If approved, honors representative:

- Signs form 23 and submits to Registrar's Office by Friday of the 4th week (The Registrar's Office will not accept form 23 directly from student)
- Signs contract form, keeps original, forwards copy to Honors College
- Notifies student and faculty supervisor of contract approval

7. Registrar's Office receives Form 23 and activates honors grade mode, which will insert "honors" into the title of the course when the final course grade is filed.

8. Student completes honors contract course.

9. Faculty member evaluates contract work and assigns grade for the course.

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Guidelines for Progress towards Honors Thesis

Those students who enter the final stage of the honors program must find a faculty advisor before registering for CHE 49800: Undergraduate Thesis Research I.

In consultation with your faculty advisor,

- You must find a faculty member who will serve as a reader in your committee by ***Friday, October 21, 2016***.
- You may find a graduate student who will serve as an informal advisor.

The following items are suggested to be handled at the discretion of your faculty advisor:

- Progress Report 1
  - *Suggested due date:* ***Friday, October 28, 2016***
  - Submit a one page progress report via e-mail, to your faculty advisor and reader summarizing the proposed research, rationale of the project, and any preliminary results.
- Oral Presentation to your faculty advisor (and graduate advisor if applicable)
  - *Suggested due date:* ***Friday, November 11, 2016***
  - The presentation should include research goals, important applications of the work, previous knowledge in the field, objectives of the present work, experimental part proposed (if experimental work is to be carried out), details on experiments to be performed, and results.
- Progress Report 2
  - *Suggested due date:* ***Friday, December 2, 2016***
  - Submit a two page progress report via email, to your faculty advisor and reader.
- Progress Report 3/Oral Presentation
  - *Suggested due date:* ***Friday, March 3, 2017***
  - Submit an updated two page progress report via email, to your faculty advisor and reader or oral presentation with your updated information. **Please note these reports are expected to be more advanced and more comprehensive than the previous ones.*

Please note the following deadlines:

- The Thesis Committee Information form is due **Friday, January 13, 2017** in the Undergraduate Office.
- Your final **written Honors (B.S.) Thesis** should be defended by **Friday, April 28, 2017**.
  - Please schedule your oral presentation time for one hour with your faculty advisor and reader.
  - Your thesis is due to the reader for a review at least three business days before the exam.
  - After the oral presentation, your committee will need to approve and sign the following forms:
    - **Thesis Acceptance**
    - **Written Thesis Approval**
    - **Oral Presentation Approval**
      - If the written Thesis needs revisions, they should be defined the day of the oral presentation.
- The forms listed above and a copy of your thesis must be submitted to the Undergraduate Office by **Friday, May 5, 2017**.

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Honors Program Application

Applicant Name: _____

Anticipated Graduation Date: _____

Student Information:

I certify that I have taken the following courses and I have obtained the following grades upon completion of the first registration of the course.

Course	Grade	Semester Completed
ENGL 10600		
COM 11400		
PHYS 24100		
MA 26100		
Math Selective I		
Math Selective II		
CHE 20500		
CHE 21100		
CHE 34800		
CHE 37700		
CHE 37800		

My present GPA is _____ at the end of the _____ semester of academic year_____.

Student's Signature: _____

Faculty Information:

Faculty Advisor: _____

Tentative Thesis Title: _____

Expected Time Commitment by Student: _____ (hrs/wk)

Frequency of regularly scheduled meetings with faculty advisor _____

Faculty signature: _____

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Thesis Committee Information

Name: _____

Thesis Title: _____

Committee Information:

Faculty (Research) Advisor: _____

Graduate Student Advisor: _____

Reader: _____

Reader Signature: _____ **Date:** _____

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Thesis Acceptance

This is to certify that the thesis presentation and written thesis prepared by

By _____

Entitled _____

complies with the School of Chemical Engineering regulations and meets the standards of the School of Chemical Engineering Honors Program for quality.

For the degree of: Bachelor of Science in Chemical Engineering with Honors

Is approved by the final examining committee:

_____

_____

_____

This thesis ☐ **is** ☐ **is not to be regarded as confidential.** _____
Faculty Advisor

Approved by: _____
Chair, CHE Honors Program Date

PURDUE CHEMICAL ENGINEERING

Written Thesis Approval

This is to certify that the written thesis prepared

By _____

Entitled _____
complies with the School of Chemical Engineering regulations and meets the standards of the School of Chemical Engineering Honors Program for quality.

For the degree of: Bachelor of Science in Chemical Engineering with Honors

Is approved by the final examining committee:

_____

_____

_____

Format Approved by:

_____ or _____

Chair, CHE Honors Program Thesis Format Advisor

Approved by: _____

Chair, CHE Honors Program Date

PURDUE CHEMICAL ENGINEERING

Oral Presentation Approval

This is to certify that the thesis oral presentation prepared

By _____
Entitled _____
complies with the School of Chemical Engineering regulations and meets the standards of the School of Chemical Engineering Honors Program for quality.

For the degree of: Bachelor of Science in Chemical Engineering with Honors

Is approved by the final examining committee:

_____

_____

_____

Approved by: _____
Chair, CHE Honors Program Date

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Thesis Guidelines

Below is a summary of the required depositing procedures and format requirements of the B.S. Honors Thesis. The Honors Thesis guidelines are based upon the required format for Theses submitted to the Graduate School of Purdue University. More detailed information can be found in Chapters 2 and 6 in the Graduate Thesis Manual. (http://www2.itap.purdue.edu/GradSchool/downloads/thesis/graduate-thesis-manual.pdf).

Procedures for Depositing the Honors Thesis

One copy of the Honors Thesis must be submitted to the Chemical Engineering Undergraduate Office by the end of the spring semester of your senior year. Please see the deadline sections for an exact date. This copy must be bound in a black three-hole screw-post binder with a backing strip (service available at the Boiler Copy Maker, PMU room 157).

A second copy should be submitted to your Thesis Advisor. This copy may be bound by any method specified by the Thesis Advisor.

Honors Thesis Format Requirements

Paper Requirement

White paper must be used. The paper size should generally be standard, eight and a half by eleven inches.

Typeface and Quality

Only one typeface may be used throughout the thesis. All text, page numbers, table numbers, figure numbers, captions, references, and footnotes must be in the same typeface. For general text, the type size should be 12 points. Variations of the basic typeface and size may be used for symbols or emphasis when appropriate.

Spacing

The vertical spacing of all thesis text, including bibliographic references, should be four lines of text per vertical inch (three lines per inch is acceptable). Long quotations, headings, and captions may be printed at six lines per inch (single-spaced). Multi-lined and subdivision headings, figure and table captions, footnotes, and endnotes normally are printed six lines of text per inch.

Margins
The following page margins must be observed:

Left Page Margin 1.5 inches
Right Page Margin 1.0 inch
Top Page Margin 1.0 inch
Bottom Page Margin 1.25 inches

All tables and figures, including their captions, must conform to the margin requirements.

Page Numbering
Every page of a thesis that includes typing or drawing is numbered. Except for the title page, page numbers must be placed on each page of the manuscript. Preliminary pages are numbered consecutively in lowercase Roman numerals. The text and all reference pages, including appendices, are numbered consecutively using Arabic numerals (beginning with 1 on the first page of the text).

The number usually is placed in the upper right corner, one-half inch below the top edge of the page. The last digit of the page number is even with the right margin. The title page is the first numbered page (Roman numeral "i"). The numeral "i", however, does **not** appear on the title page. The page following the title page is the first page that has a number (Roman numeral "ii"). The word "page" never accompanies the number.

Title Page (Required)
The title page must include the full, official title of the thesis, your full name as it appears in the University records, the title of the degree awarded, and the date the degree is awarded (**see Figure 2**).

The degree title is "Bachelor of Science in Chemical Engineering with Honors". The date is the month and year that the degree is actually awarded (e.g., May 200X).

Table of Contents (Required)
A Table of Contents is required (**see Figure 3**). The heading TABLE OF CONTENTS, in capital letters, is centered between the left and right margins, without punctuation or underlining, two inches from the top of the page. The list begins at the left margin, three blank lines below the heading. All material following the Table of Contents is listed in it. No preceding material is listed. The headings of parts, sections, chapters, and their principal subdivisions are listed in the Table of Contents and must be worded exactly as they appear in the body of the thesis. When listing the subdivisions, list the same levels of headings and subheadings consistently for each chapter. Dotted leaders are required between headings and page numbers. If the Table of Contents continues beyond one page, allow a one-inch top margin on successive page(s). The word Page should be typed above

the listing of the page numbers. Number the Table of Contents pages in lowercase Roman numerals.

List of Tables and List of Figures (Optional)

The heading LIST OF TABLES, in capital letters, is centered between the left and right margins, without punctuation or underlining, two inches from the top of the page. Number the List of Tables page in lowercase Roman numerals. The list begins at the left margin, three blank lines below the heading. The List of Tables contains exactly the same numbers and captions as appear above the tables in the text and in the appendices. If the List of Tables continues beyond one page, allow a one-inch top margin on the following page(s). The format for the List of Tables is the same as for the Table of Contents. Type the word Table above the listing of the table numbers and captions. Type the word Page above the listing of page numbers.

The heading LIST OF FIGURES, in capital letters, is centered between the left and right margins, without punctuation or underlining, two inches from the top of the page. Number the List of Figures page in lowercase Roman numerals. The list begins at the left margin, three blank lines below the heading. The List of Figures contains exactly the same numbers and captions as appear below the figures in the text and in the appendices. If the List of Figures continues beyond one page, allow a one-inch top margin on successive page(s). The format for the List of Figures is the same as for the Table of Contents. Type the word Figure above the listing of figure numbers and the word Page above the listing of page numbers.

Abstract (Required)

An abstract consisting of two paragraphs is required (**see Figure 4**). The first paragraph contains your name as it appears on the title page but with the last name first, the abbreviation of the degree title, the name of the institution granting the degree, the month and year the degree is awarded, the exact title of the thesis, and the name of the Honors Thesis Advisor. The second paragraph is a summary of the research, not to exceed 350 words. The first paragraph of the abstract is printed at six lines per inch (single-spaced). The spacing used in the summary paragraph must be the same as the spacing in the rest of the text. The 350-word limit of the abstract does not include the first paragraph. Mathematical formulas, diagrams, and other illustrative materials are not recommended for the abstract.

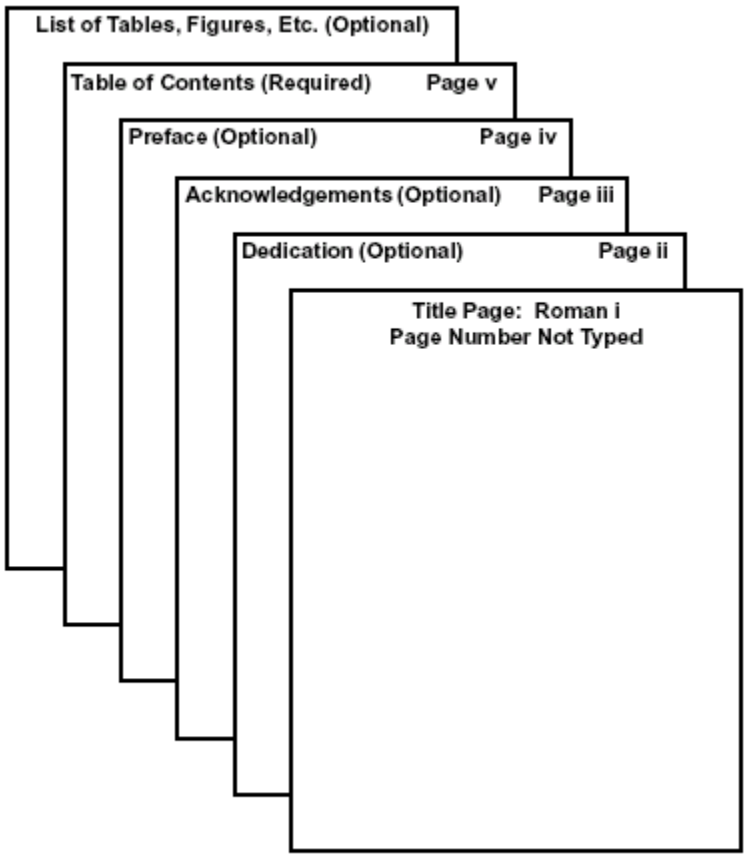

Figure 1: Order of Preliminary Pages

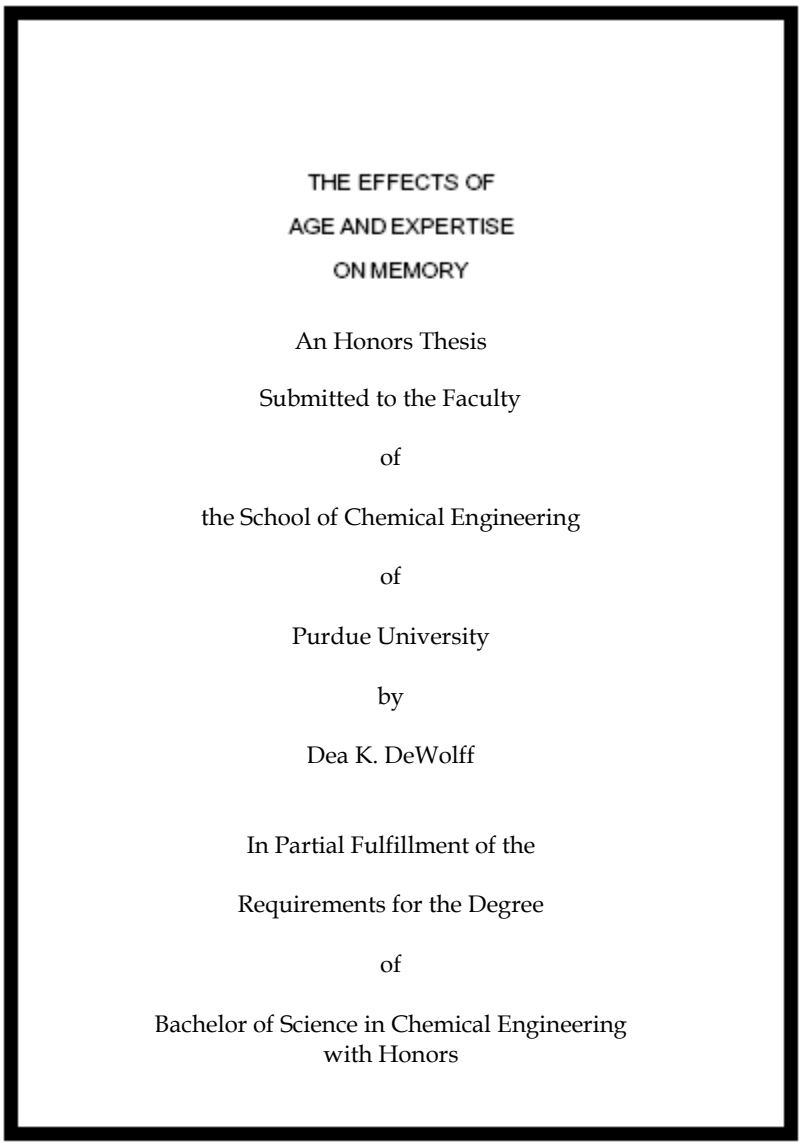

Figure 2: Title Page

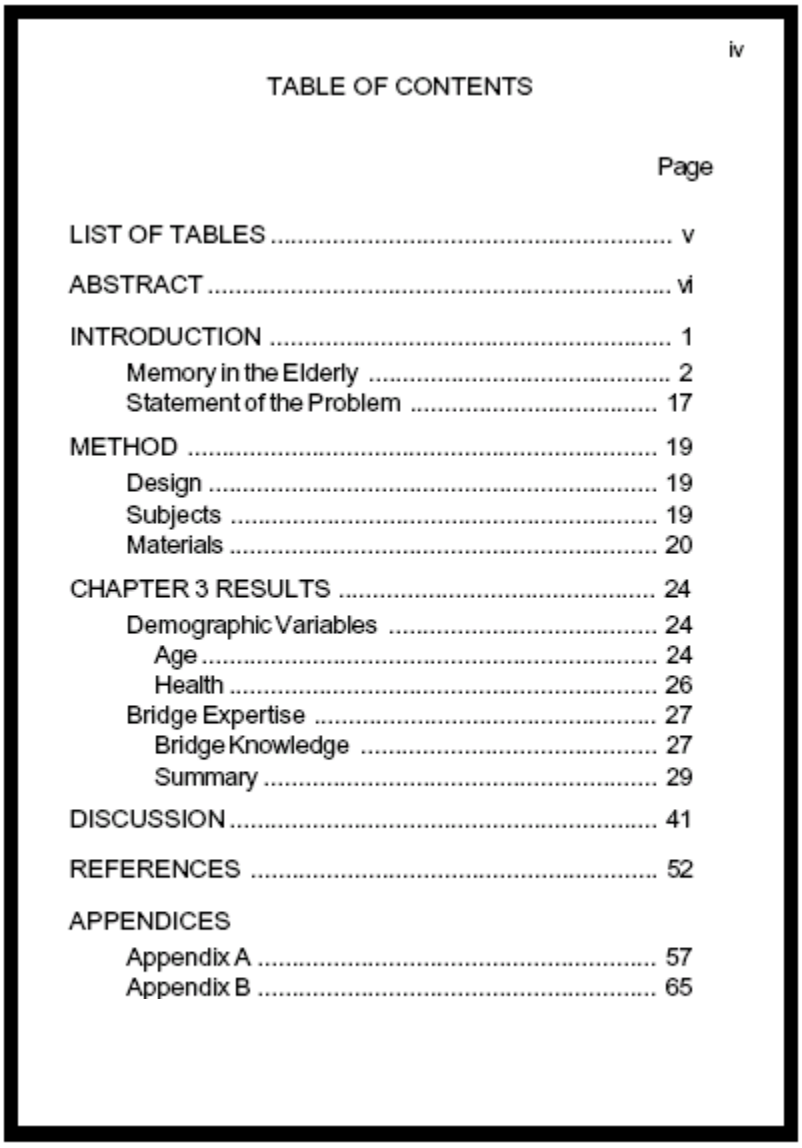

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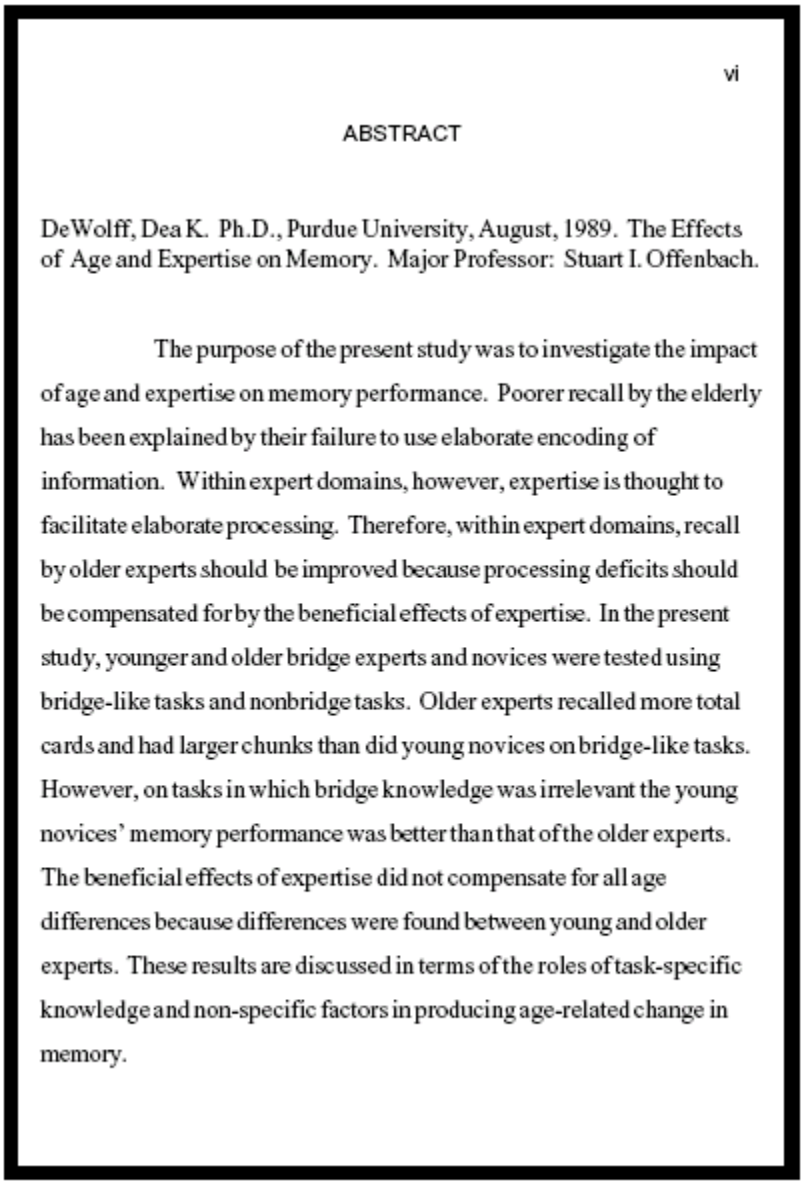
Figure 3: Table of Contents

"Major Professor" should be replaced by "Honors Thesis Advisor" in the first paragraph of the Abstract. "Ph.D." should be replaced by "B.S.ChE"



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ABSTRACT

DeWolff, Dea K. Ph.D., Purdue University, August, 1989. The Effects of Age and Expertise on Memory. Major Professor: Stuart I. Offenbach.

The purpose of the present study was to investigate the impact of age and expertise on memory performance. Poorer recall by the elderly has been explained by their failure to use elaborate encoding of information. Within expert domains, however, expertise is thought to facilitate elaborate processing. Therefore, within expert domains, recall by older experts should be improved because processing deficits should be compensated for by the beneficial effects of expertise. In the present study, younger and older bridge experts and novices were tested using bridge-like tasks and nonbridge tasks. Older experts recalled more total cards and had larger chunks than did young novices on bridge-like tasks. However, on tasks in which bridge knowledge was irrelevant the young novices' memory performance was better than that of the older experts. The beneficial effects of expertise did not compensate for all age differences because differences were found between young and older experts. These results are discussed in terms of the roles of task-specific knowledge and non-specific factors in producing age-related change in memory.

Figure 4: Abstract