Component Area Option (b): Writing in the Disciplines - ENGI - 2304

Restricted Use - AR -UGRD Course - REVISE existing Core Course <or> Revise existing non-core course to ADD to Core

General Information

Please use this form to:

- **REVISE** a course that is already on the Core course list.

- **ADD** to the Core course list an existing permanent course that is not already on the Core course list

Course Ownership

Department* **Engineering**

Will the course be cross-listed with another area?* ◯ Yes ⦿ No

If "Yes", please enter the cross-listed course information (Prefix Code Title)

Implementation

Academic Year to begin offering course:* ⦿ 2015 ◯ 2016 ◯ 2017

Term(s) Course will be TYPICALLY Offered:* ☑ Fall (including all sessions within term)
☑ Spring (including Winter Mini all sessions within term
☑ Summer (including Summer Mini and all sessions within term)

Justification for changing course

Justification(s) for Adding Course* **1. REVISE EXISTING non-CORE COURSE ADD TO CORE**

1c. Change course title

1h. Change course prerequisite

Justification "Other" if selected above:

Importing course information for revising existing Core course

Instructional Area/Course Prefix* ENGI   **Course Number*** 2304

Long Course Title* Technical Communications for Engineers

Short Course Title Technical Communications

Instruction Type and Student Contact Hours

Instruction Type* **Lecture ONLY**

Contact Hours

Student Contact Hours are determined by a number of factors, including instruction type, and are used to determine the accuracy of credit hours earned by accrediting agencies and THECB. Please contact your college resource for assistance with this information.

Student Contact Hours must match the instruction type.
Eg: If Lecture ONLY, then Student Contact Hours for Lab must be zero.
Eg: If Lab ONLY, then Student Contact Hours for Lecture must be zero.

Lecture* 3   **Lab*** 0

Grade Options

Grade Option* **Letter (A, B, C.....)**

CIP Code

The CIP Code is used by the university and the THECB to determine funding allocated to the course, which means that selecting the most helpful valid code may have an effect on your course.

If assistance is needed with code selection, please contact your college resource.

CIP Code Directory: http://www.txhighereddata.org/Interactive/CIP/

CIP Code must use this format:
##.####.## ##

Course Repeatability

Can this course be repeated for credit?* ◯ Yes ⦿ No

If Yes, how often and/or under what conditions may the course be repeated?

CIP Code* 14.0101.00 06

Catalog Descriptions

Prerequisite(s):* ENGL 1304, an engineering major, and completion of one of the following courses: BIOE 1331, CHEE 1331, CIVE 1331, ECE 1331, INDE 1331, MECE 1331, or PETR 1331.

Corequisite(s)

Course Description*

Engineering communication skills: written proposals, specifications, progress reports, and technical reports; individual and group oral presentations; essays on engineering ethics, contemporary engineering issues and the impact of engineering decisions.

Course Notes

Authorized Degree Program(s)

Impact Report *

Impact Report for engi 2304

Prerequisite:	BIOE 4334 - Capstone Design
	BIOE 4335 - Capstone Design I
	BIOE 5455 - Bioanalytics
	CHEE 4321 - Chemical Engineering Design I
	CIVE 3332 - Engineering Materials
	CIVE 3339 - Geotechnical Engineering
	CIVE 3434 - Fluid Mechanics and Hydraulic Engineering
	ECE 3155 - Electronics Laboratory
	ECE 3355 - Electronics
	ECE 4335 - Electrical and Computer Engineering Design I
	INDE 4331 - Analysis of Industrial Activities
	INDE 4374 - Industrial Supervision
	INDE 4388 - Engineering Leadership and Entrepreneurism
	MECE 2361 - Introduction to Mechanical Design
Programs	Bachelor of Science in Industrial Engineering/Master of Business Administration (Dual Degree)

	Biomedical Engineering, B.S.B.E.
	Chemical Engineering, B.S.Ch.E.
	Civil Engineering, B.S.C.E.
	Computer Engineering, B.S.Cp.E.
	Electrical Engineering, B.S.E.E.
	Engineering General Degree Requirements
	Industrial Engineering, B.S.I.E.
	Mechanical Engineering, B.S.M.E.
	Petroleum Engineering, B.S.P.E.T.E.
	Sample Program - Biomedical Engineering (BIOE)

Core Curriculum Information

For additional guidance when developing course curriculum that will also meet the Core Curriculum requirements, please refer to the Undergraduate Committee website for Core Curriculum:

http://www.uh.edu/undergraduate-committee/doc_2014-core-review.html

Therein you will find a chart for the required and optional competencies based on the Core Component Area (Core Category) selected.

Component Area for which the course is being proposed (select one)*
Component Area Option (b): Writing in the Disciplines

List the student learning outcomes for the course*

- An ability to function on multi-disciplinary teams
- An understanding of professional and ethical responsibility
- An ability to communicate effectively
- The broad education necessary to understand the impact of engineering solutions in a global and societal context
- A recognition of the need for, and an ability to engage in life-long learning
- A knowledge of contemporary issues

Competency areas addressed by the course*
Communication Skills

Critical Thinking

Empirical & Quantitative Skills

Personal Responsibility

Teamwork

Because we will be assessing student learning outcomes across multiple core courses, assessments assigned in your course must include assessments of the core competencies. For each competency selected above, indicated the specific course assignment(s) which, when completed by students, will provide evidence of the competency.

Provide (upload as attachment) detailed information, such as copies of the paper or project assignment, copies of individual test items, etc. A single assignment may be used to provide data for multiple competencies.

Critical Thinking, if applicable

Students write five two-page essays on engineering education, engineering ethics, contemporary engineering issues, and the implications of engineering decisions. Please see attachments for assignments

Communication Skills, if applicable

Students give three presentations during the class. They also submit 14 different assignments in different formats, including essays, technical recommendation reports, formal business letters, resumes, schedules, and specifications.

Empirical & Quantitative Skills, if applicable

Students write a ten-page recommendation report that uses available data. Based on their criteria and evidence, they recommend a choice.

Teamwork, if applicable

- students work in a team of 4 to produce a 15-minute presentation.
- students work in a team of 2 to produce a 10-minute presentation.

Social Responsibility, if applicable

Personal Responsibility, if applicable   Students write three two-page essays about the impact of engineering decisions and how current events affect engineering.

Syllabus

Syllabus*   ✓ Syllabus Attached

Will the syllabus vary across multiple section of the course?*   ● Yes   ○ No

If yes, list the assignments that will be constant across sections

all sections use the same assignments

Important information regarding Core course effectiveness evaluation:

Inclusion in the core is contingent upon the course being offered and taught at least once every other academic year. Courses will be reviewed for renewal every 5 years.

The department understands that instructors will be expected to provide student work and to participate in university-wide assessments of student work. This could include, but may not be limited to, designing instruments such as rubrics, and scoring work by students in this or other courses. In addition, instructors of core courses may be asked to include brief assessment activities in their course.

Additional Information Regarding This Proposal

Comments: original "paper" proposals attached.

CBM003 ADD/CHANGE FORM

	or	
☒ **Undergraduate Committee** ☐ **New Course** ☒ **Course Change** **Core Category:** <u>WID</u> **Effective Fall 2014**		☐ **Graduate/Professional Studies Committee** ☐ **New Course** ☐ **Course Change** **Effective Fall 2014**

1. Department: <u>Engineering</u>   College: <u>ENGR</u>

2. Faculty Contact Person: <u>Chad Wilson</u>   Telephone: <u>713-743-0180</u>   Email: <u>cawilson@uh.edu</u>

3. Course Information on New/Revised course:
   - Instructional Area / Course Number (*see CBM003 instructions) / Long Course Title:
     <u>ENGI</u> / <u>2304</u> / <u>Technical Communications for Engineers</u>

   - Instructional Area / Course Number / Short Course Title (30 characters max.)
     <u>ENGI</u> / <u>2304</u> / <u>TECHNICAL COMMUNICATIONS</u>

   - SCH: <u>3.00</u>   Level: <u>SO</u>   CIP Code: <u>14.0101.00 06</u>   Lect Hrs: <u>3</u>   Lab Hrs: <u>0</u>
   - Term(s) Course is Offered (*see CBM003 instructions about selection):
   Fall, Spring, Summer

4. Justification for adding/changing course: **To meet core curriculum requirements**

5. Was the proposed/revised course previously offered as a special topics course? ☐ Yes ☒ No
   If Yes, please complete:
   - Instructional Area / Course Number / Long Course Title:

     ____ / ____ / _____

   - Course ID: _____   Effective Date (currently active row): _____

6. Authorized Degree Program(s): <u>BSBE, BSCE, BSME, BSEE, BSCpE, BSIE, BSChE, BSPetE</u>
   - Does this course affect major/minor requirements in the College/Department?   ☐ Yes ☒ No
   - Does this course affect major/minor requirements in other Colleges/Departments?   ☐ Yes ☒ No
   - Can the course be repeated for credit?   ☐ Yes ☒ No (if yes, include in course description)

7. Grade Option: <u>Letter (A, B, C ...)</u>   Instruction Type: <u>lecture ONLY</u>   (Note: Lect/Lab info. must match item 3, above. *See CBM003 instructions.)

8. If this form involves a change to an existing course, please obtain the following information from the course inventory: Instructional Area / Course Number / Long Course Title
   <u>ENGI</u> / <u>2304</u> / <u>Technical Communications for Engineers</u>

   - Course ID: <u>21302</u>   Effective Date (currently active row): <u>82014</u>

9. Proposed Catalog Description: (If there are no prerequisites, type in "none".)
   Cr: 3. (3-0). Prerequisites: ENGL 1304, an engineering major, and completion of one of the following courses: BIOE 1331, CHEE 1331, CIVE 1331, ECE 1331, INDE 1331, MECE 1331, or PETR 1331
   Description (30 words max.): Engineering communication skills: written proposals, specifications, progress reports, and technical reports; individual and group oral presentations; essays on engineering ethics, contemporary engineering issues and the impact of engineering decisions.

10. Dean's Signature: _David P. Shattuck_____   Date: 24 MAR 2014

- Created on 3/21/2014 12:54:00 PM -

REQUEST FOR COURSES IN THE CORE CURRICULUM

Originating Department or College: College of Engineering

Person Making Request: Chad Wilson　　　　　Telephone: 713-743-0180

　　　　　　　　　　　　　　　　　　　　　　　　Email: cawilson@uh.edu

Dean's Signature: _____　　　　Date: 3-19-2014

Course Number and Title: Click here to enter text.

Please attach in separate documents:

　　　　　　X☐ Completed CBM003 Add/Change Form with Catalog Description

　　　　　　X☐ Syllabus

List the student learning outcomes for the course (Statements of what students will know and be able to do as a result of taking this course. See appended hints for constructing these statements):

Students will know the style and format of engineering writing. Students will be able to create documents written in the correct format. Students will be able to adapt content and style depending on the needs of the audience and the purpose of the document. Students will be able to edit and revise their own work for content, style, and mechanics. Students will be able to find information on scientific or engineering topics. Students will be able to manage a group and produce group documents and presentations effectively and efficiently. Students will be able to analyze and explain in writing and presentations the impact of engineering decisions and solutions in a societal or global context. Students will be able to use news sources to analyze and then write and present about engineering ethics and ethical failures.

Component Area for which the course is being proposed (check one):

*Note: If you check the Component Area Option, you would need to also check a Foundational Component Area.

X☐ Communication	☐ American History
☐ Mathematics	☐ Government/Political Science
☐ Language, Philosophy, & Culture	☐ Social & Behavioral Science
☐ Creative Arts	X☐ Component Area Option
☐ Life & Physical Sciences	

Competency areas addressed by the course (refer to appended chart for competencies that are required and optional in each component area):

X☐ Critical Thinking	X☐ Teamwork
X☐ Communication Skills	☐ Social Responsibility
X☐ Empirical & Quantitative Skills	X☐ Personal Responsibility

Because we will be assessing student learning outcomes across multiple core courses, assessments assigned in your course must include assessments of the core competencies. For each competency checked above, indicated the specific course assignment(s) which, when completed by students, will provide evidence of the competency. Provide detailed information, such as copies of the paper or project assignment, copies of individual test items, etc. A single assignment may be used to provide data for multiple competencies.

Critical Thinking:
Students write five two-page essays on engineering education, engineering ethics, contemporary engineering issues, and the implications of engineering decisions.

The descriptions/prompts for these assignments are listed below. Samples are available in the sample student work file, pages 17 through 31.

Response Journal 1: Broad Education

Response Journal 1 concerns how your general courses will affect your engineering coursework or your abilities as a working engineer. Discuss how courses such as economics, government, philosophy, English, psychology, or other general education courses will affect your life as an engineer. Try to be as specific as possible and make an argument about exactly how they will or will not affect your life as an engineer or as an engineering student.

Response Journal 2: Ethics

Response Journal 2 is on Doyle's "The Engineer's Thumb," found at http://www.eastoftheweb.com/short-stories/UBooks/AdveEngi.shtml. Discuss an ethical situation found in the story, and refer to the engineering code of ethics (http://www.nspe.org/resources/pdfs/Ethics/CodeofEthics/Code-2007-July.pdf). Use proper citations to document at least one quote from the story and one quote from the engineering code of ethics.

Response Journal 3: Contemporary Issues and Ethics

Response Journal 3 discusses a subject from the news that may pose an ethical problem for engineers. Summarize the subject, explaining how it poses an ethical problem. Go into detail analyzing why it is an ethical situation and what challenges or solutions you see for the problem.

Response Journal 4: Contemporary Issues and Life-long Learning

Response Journal 4 covers a current issue facing engineers in your discipline. Find an important magazine or journal for your discipline (either online or in the library) such as IEEE Spectrum (www.spectrum.ieee.org) or ME Magazine (www.memagazine.org) and read one of the feature articles. Summarize and then comment on or analyze the article. Include proper website documentation in the text of your journal as well as at the end of the document.

Response Journal 5: Implications of Engineering Decisions

Response Journal 5 is on a contemporary issue that poses challenges for engineers in your discipline. Search cnn.com or another news source to find a current issue. Then analyze that issue to describe how it affects engineering and how engineers may or should deal with it. The point of this journal is to discuss the implications of engineering, whether those implications are economic, philosophical, environmental, or social. This journal differs from Response Journal 2 in that is discusses a current issue from a news source, not from an engineering magazine. Search the news to find anything you see that may pose challenges for engineers.

Communication Skills:
Students give three presentations during the class. They also submit 14 different assignments in different formats, including essays, technical recommendation reports, formal business letters, resumes, schedules, and specifications.

Empirical & Quantitative Skills:
Students write a ten-page recommendation report that uses available data. Based on their criteria and evidence, they recommend a choice.

See sample in student work file, page 32..

Teamwork:
Students work in a team of 4 to produce a 15-minute presentation.
Students work in a team of 2 to produce a 10-minute presentation.

Social Responsibility:
Click here to enter text

Personal Responsibility:
Students write three two-page essays about the impact of engineering decisions and how current events affect engineering.

See pages 23 through 31 in sample student work file.

Will the syllabus vary across multiple section of the course?   X☐ Yes   ☐ No
If yes, list the assignments that will be constant across sections:
All sections use the same assignments.

Inclusion in the core is contingent upon the course being offered and taught at least once every other academic year. Courses will be reviewed for renewal every 5 years.

The department understands that instructors will be expected to provide student work and to participate in university-wide assessments of student work. This could include, but may not be limited to, designing instruments such as rubrics, and scoring work by students in this or other courses. In addition, instructors of core courses may be asked to include brief assessment activities in their course.

Dept. Signature: _____

Technical Communications

Policy Statement – Spring 2014

Section

Instructor: Phone:
Office: E-mail:

Course Description

ENGI 2304: Technical Communications. Cr. 3. (2-3). Prerequisites: ENGL 1304, an engineering major, and completion of one of the following courses: CHEE 1331, CIVE 1331, ECE 1331, INDE 1331 or MECE 1331. Engineering communication skills: written proposals, specifications, progress reports, and technical reports; individual and group oral presentations; essays on engineering ethics, contemporary engineering issues and the impact of engineering decisions.

Expected Course Goals and Outcomes

ENGI 2304 seeks to teach students the basics of engineering writing through various reading and writing projects. The course will introduce students to scientific research, including documents generally required in engineering, but will do so through projects that require critical thinking and analysis.

Outcomes

Students who successfully complete this course are expected to demonstrate the following course outcomes:

- An ability to function on multi-disciplinary teams
- An understanding of professional and ethical responsibility
- An ability to communicate effectively
- The broad education necessary to understand the impact of engineering solutions in a global and societal context
- A recognition of the need for, and an ability to engage in life-long learning
- A knowledge of contemporary issues

Expectations of the Student

Based on these outcomes, students are expected to develop or learn the following:

- Confidence in communication, both oral and written

- Knowledge about the style and format of engineering writing
- The ability to create documents written in the correct format
- The ability to adapt content and style depending on the needs of the audience
- The ability to adapt content and format depending on the purpose of the document
- The ability to edit and revise one's own work for content, style, and mechanics
- The ability to find information on scientific or engineering topics
- The ability to manage a group and produce group documents and/or presentations effectively and efficiently
- Knowledge of the impact of engineering decisions and solutions
- An understanding of engineering ethics

Required Texts

Finkelstein, Leo. *Pocket Book of Technical Writing for Engineers and Scientists*. Boston: McGraw-Hill, 2005.

Email and Blackboard

You should have an e-mail address tied to your UH account. We will use Blackboard to post all materials and to enable active communication. The procedures for joining Blackboard will be described during the first class period. You should consult Blackboard regularly to ensure that you are up-to-date on all course materials.

Discussions and In-Class Writing

This is a writing-intensive, discussion-based class, requiring active involvement, intellectual engagement, and constructive collaboration from every student. Class discussion is the foundation of this class. Thus, every student's presence, preparedness, and active participation are required.

The Role of Writing Consultants and the Writing Center

Students will have at least one conference with course Writing Consultants during the semester. These conferences give the student an opportunity to receive direct instruction and feedback and address individual and group learning concerns. Writing Consultants will be available by appointment and during scheduled office hours.

As integral members of the course's instructional team, course Writing Consultants will be able to help students clarify and apply writing instructions, techniques, and lessons throughout the development of each student's assignments. Though they are available for assistance, Writing Consultants *do not* proofread, dictate content, or co-author students' papers, nor do they predict what grade an assignment might earn.

The penalty for not attending a scheduled appointment with a Writing Consultant is a deduction of 2.5 points from the student's final grade in ENGI 2304. Attending a scheduled appointment without the required materials will result in the same deduction. If you need to cancel an appointment, you must do so with the Writing Center at least 24

hours before your appointment. Make sure you are there for your appointments and that you have material to work on.

Grading

Table 1 shows the grading for assignments in ENGI 2304. The Letter of Intent, Proposal, Progress Report, Description of a Mechanism, Individual Technical Presentation, and Poster comprise the semester project, as discussed later.

Table 1. Assignments and Grade Percentages for ENGI 2304.

Note that presentations are in italics.

Assignment	Grade Percentage
Document Creation Group Presentation	3%
WTF Presentation	8%
Recommendation Report	10%
Recommendation Report Presentation	8%
Recommendation Report Poster	8%
Response Journals (5 of them)	10%
Discussion Board Posts	5%
Presentation Critiques	4%
Quizzes (10 of them)	5%
Conventions of Discipline Homework	2%
Formal Introduction Email	2%
Formal Business Letter with Technical Definition	5%
Author Guidelines and Works Cited Guidelines Homework	1%
Resume	3%
Schedule	5%
Specifications	5%
Abstracts Homework	5%
Concision and Precision Homework	2%
Punctuation Disasters	4%
Professionalism	5%
Total:	100%

Attendance

Students should contact the instructor in advance if they must be absent or tardy. Emergency absences will be handled on a case-by-case basis. Missing more than three (2 for hybrid classes) sessions may prevent the student from meeting the minimum requirements for the class, and will negatively affect the student's class contribution grade. The second occasion of tardiness will count as half an absence, provided the student arrives within the first 15 minutes of class. Arriving 15 minutes late to class

equals a full absence. Students who miss class should arrange to get notes from a fellow student.

Withdrawal Policy

The withdrawal dates listed in the Academic Calendar section of the Class Schedule will be followed strictly. Please consult this document for appropriate dates. Grades of Incomplete (I) will be given only when a small portion of the course has not been completed for a good reason. If the material has been completed, an "I" grade cannot be given. Detailed information about these issues is available in the Student Handbook on page 17.

Academic Honesty Policy

This class will function as a community of writers and project managers, sharing ideas and contributing to a general discourse. According to university and department policy, plagiarism (broadly defined as passing off somebody else's work as your own) constitutes grounds for penalties, including failure of the assignment in question, failure of the course, or suspension from the University. Students should protect themselves by keeping notes and drafts of all written work, and developing a clear understanding of documentation. Students in this course are expected to follow the Academic Honesty Policy of the University of Houston. It is your responsibility to know and follow this policy.

Proper documentation must be provided for any use of data, ideas, or work that did not originate with the student. Any statement of facts that are not the student's own and are not accepted as common knowledge must be properly referenced. The documentation style you follow is up to you, but make sure you are consistent. I recommend the one in Finkelstein, IEEE, or CMS.

All aid from students, professors, family members, etc. should be noted at the end of each assignment. Seeking assistance with most written assignments is perfectly acceptable – provided that assistance is documented, credited, and permissible within the limits of the assignment. Students are strongly encouraged to seek assistance from the instructor, course Writing Consultants, or fellow students within the class. Students who fail to acknowledge all assistance they receive will be penalized according to the University's standards regarding academic honesty.

Students with Disabilities

Students with recognized disabilities will be provided reasonable accommodations appropriate to the course, upon documentation of the disability with a Student Accommodation Form from the Center for Students with DisAbilities. To receive these accommodations, you must request the specific accommodations by submitting them to the instructor in writing by the 16th calendar day of the semester. Students who fail to submit a written request will not be considered for accommodations. For more

information, see the Student Handbook, page 27. Contact CSD in room 305 of the Student Service Center (or call 743-5400 / voice, 749-1527 / TDD).

The Counseling and Psychological Services Office (CAPS) offers individual and group counseling for a variety of personal, vocational, and academic issues. Health professionals are available to address a variety of concerns, including stress, anxiety, depression, financial worries, time management, and academic adjustment. All services are confidential. CAPS is located on the second floor of the Student Service Building (or call 743-5454).

Religious Holy Days

Students whose religious beliefs prohibit class attendance on designated dates may request an excused absence. Request the excused absence in writing by the 15th calendar day of the semester. Consult the Student Handbook for more info.

Written Assignments

Unless otherwise directed, all papers must
- be submitted to the Blackboard Assignments tab
- be in a standard 12-point font
- have standard margins
- have **numbered pages** (if appropriate)
- include an appropriate heading
- include an appropriate title
- acknowledge all aid from students, professors, family members, etc. at the end of every assignment.

Late Assignments

Late assignments will be accepted, but not without penalty. One letter grade will be deducted for the first class period an assignment is late. After the first class period has passed, three letter grades will be deducted, and one grade will be deducted for every class period after the second. For example, if an essay is due on Monday and is not turned in during the class period, it is considered late. If it is turned in during or anytime before the following class, ten points will be deducted from the final grade. If it is turned in after the following class, but before or during the next class, 30 points will be deducted from the final grade on the assignment.

Peer reviews may not be made up. Not attending a peer review session or coming without a COMPLETE draft will result in a grade of 0 for the peer review.

Digital Submission of Materials

All assignments, including presentations, must be turned into the Assignments tab of your Blackboard account **before class** on the day they are due. They must be saved in the following manner:

Last name First name Major Abbreviated Assignment title.doc (or .ppt)

Therefore, if I were turning in my technical report, I would label it

Wilson Chad CPE Tech Report.doc

Please follow these guidelines for all of your work.

Professionalism

This portion of your grade will be determined by your quizzes, absences, tardies, willingness to participate in class discussions and during group work, peer reviews, as well as your overall professionalism in the class. Treat the class professionally,

and you will do well in this category. (A sense of humor is generally not grounds for deduction.)

Peer Reviews
We will have several Peer Reviews, and the goal of these assignments is to help your peers. You will be graded on the depth of your response, as well as the helpfulness of your comments. Always try to provide concrete, clear suggestions in your Peer Reviews. As stated earlier, if you miss a Peer Review session, come in after the session has already begun, or if you do not have a COMPLETE draft, you will receive a grade of 0 for the Peer Review.

Discussion Board Entries

Each student is required to post to our course Discussion Board at least twice a week. However, you are encouraged to post more than twice a week, and multiple posts will improve your Professionalism grade.

Discussion Board posts should be a mixture of new posts and responses to other students. I encourage you to read and respond to what other students are asking or saying. If you only post new ones without responding to other students' posts, your Professionalism grade will suffer.

Discussion Board entries can cover anything about the class, about technical writing, or about school in general. You may comment, ask questions, or answer questions so that other students can benefit from your knowledge and so that you can help others, as well. **Posts must be substantial, however**. Although I don't really grade on length, a lone question such as "Does anyone understand the proposal?" will generally be seen as Unacceptable, unless the student has posted another response during the posting period. If the student explains why the proposal is confusing, however, then the response would be Acceptable. There are only three don'ts here:

- Do not merely complain about the class. These entries don't really help anyone, and they tend to annoy the instructor, which is never a good idea.
- Do not insult anyone. Remember to treat the class professionally, which means you should treat your classmates professionally, too.
- Do not merely repeat information from your Response Journals. Your posts should be wholly different.

Discussion Board posts will be graded as either "Acceptable" or "Unacceptable" based on the following criteria:

- Depth of response (evidence of thought)
- Appropriateness for audience and forum
- Clarity of writing

Although "clarity of writing" is included here, spelling, grammar, and mechanics will not generally be a factor in your grade. However, if an entry is not easily comprehensible because of its confusing writing, then there is no way to judge the "depth of response," and the entry is therefore not "appropriate" for the given audience. Thus, any entry which has numerous mistakes or errors that impede its understanding will be graded as Unacceptable. Unacceptable responses are equivalent to a grade of 0, or not doing the assignment at all. I will email you if one of your posts is Unacceptable.

Response Journals

You will turn in five Response Journals over the course of the semester. Make sure you follow the syllabus to see when your Response Journals are due and what material they should cover. Your Response Journal entries should be more than one double-spaced page, and should contain at least three or four complete paragraphs. They should be a maximum of two pages.

These journals require you to do two different things. Your first **short** paragraph should provide context. If you are required to read a Sherlock Holmes story or a news story, you should summarize the main points of those items. This portion should be rather short—a quarter to a half a page.

The next paragraphs of each Response Journal should react to the reading or summary—asking questions, offering answers, clarifying, or problematizing anything discussed in the reading assignment. This part is difficult, but it is also the place where you demonstrate your critical thinking abilities. The point is to show me that you have not only read, but that you have paid attention, thought about, dissected, and learned from the material. Use your engineering problem-solving abilities to question and examine.

I have fielded a few questions about how students can improve their Response Journals, and most of them boil down to my phrase "go deeper." What I mean by "go deeper" is this: any situation that you talk about in your Response Journals needs to be viewed from every possible angle. That's perhaps impossible, granted, but you need to examine situations as complex problems with no easy answer.

For example, in "The Adventure of the Engineer's Thumb," Holmes says that Hatherley gained experience, hinting that he now knows not to accept jobs like that again. Do we have to take Holmes's word for that, though? Could Hatherley have gone through the same situation and come out fine? Is it possible that Hatherley was in on the counterfeiting scheme all along? Is it possible that Hatherley did not tell the truth about everything he says about that night? Would you really have done anything differently?

So when it comes to contemporary issues, don't be content with describing what happens with technology or in the news. Instead, "go deeper." If there is an explosion at an oil refinery, perhaps you can go into an examination of government regulations of these refineries. Why are there some strict regulations and some lax ones? Does the fact that we live in Houston have anything to do with how strict they are? What about the number of cars we drive? The lack of public transportation?

We want to see that you are thinking critically, which means to try to see and describe something from all sides. Doing this requires a lot of space, however, so it is generally better if you pick one aspect and flesh it out. The best response journals discuss one idea in depth instead of hitting the surface of a few different ones.

Response Journal 1: Broad Education

Response Journal 1 concerns how your general courses will affect your engineering coursework or your abilities as a working engineer. Discuss how courses such as economics, government, philosophy, English, psychology, or other general education courses will affect your life as an engineer. Try to be as specific as possible and make an argument about exactly how they will or will not affect your life as an engineer or as an engineering student.

Response Journal 2: Ethics

Response Journal 2 is on Doyle's "The Engineer's Thumb," found at http://www.eastoftheweb.com/short-stories/UBooks/AdveEngi.shtml. Discuss an ethical situation found in the story, and refer to the engineering code of ethics (http://www.nspe.org/resources/pdfs/Ethics/CodeofEthics/Code-2007-July.pdf). Use proper citations to document at least one quote from the story and one quote from the engineering code of ethics. Use Finkelstein's documentation system or the one used in your major. Failure to document these sources correctly will result in a grade of Unacceptable.

Response Journal 3: Contemporary Issues and Ethics

Response Journal 3 discusses a subject from the news that may pose an ethical problem for engineers. Summarize the subject, explaining how it poses an ethical problem. Go into detail analyzing why it is an ethical situation and what challenges or solutions you see for the problem. Be sure to use the standard citation/referencing system that Finkelstein recommends in Chapter 14 of *PBTW* or one that is used in your major. Failure to document these sources correctly will result in a grade of Unacceptable.

Response Journal 4: Contemporary Issues and Life-long Learning

Response Journal 4 covers a current issue facing engineers in your discipline. Find an important magazine or journal for your discipline (either online or in the library) such as IEEE Spectrum (www.spectrum.ieee.org) or ME Magazine (www.memagazine.org) and read one of the feature articles. Summarize and then comment on or analyze the article. Include proper website documentation in the text of your journal as well as at the end of the document. Be sure to use the standard citation/referencing system that Finkelstein recommends in Chapter 14 of *PBTW* or one that is used in your major. Failure to document these sources correctly will result in a grade of Unacceptable.

Response Journal 5: Implications of Engineering Decisions

Response Journal 5 is on a contemporary issue that poses challenges for engineers in your discipline. Search cnn.com or another news source to find a current issue. Then analyze that issue to describe how it affects engineering and how engineers may or should deal with it. The point of this journal is to discuss the implications of engineering, whether those implications are economic, philosophical, environmental, or social. This journal differs from Response Journal 2 in that is

discusses a current issue from a news source, not from an engineering magazine. Search the news to find anything you see that may pose challenges for engineers. Be sure to use the standard citation/referencing system that Finkelstein recommends in Chapter 14 of *PBTW* or one that is used in your major. Failure to document these sources correctly will result in a grade of Unacceptable.

When Technology Fails Presentations

A team of no more than two students will be responsible for one presentation covering a chapter from *When Technology Fails* by Neil Schlager. The book is available in the library's reserve section. Photocopy the chapter you have chosen. Your presentation should be an approximately 10 minute long PowerPoint presentation, and it should summarize the material from the chapter. The rest of the class has not read the material, so the team's job is to teach them the material using PowerPoint slides. Keep in mind that you are the only ones who have read the material and that you must explain everything carefully so we can understand it.

To do well in these presentations, keep the following in mind:
- Read the chapter from Schlager several times until you fully understand his points.
- Decide which points from the chapter are most interesting or most important. In other words, which parts should you concentrate on? You only have a few minutes, so you may need to choose the important information from the chapter and disregard the rest.
- Do not follow the format of the chapter if it doesn't work well for a PowerPoint presentation.
- Concentrate on ethical or design failures.
- Use pictures (clearly documented with the URL or list of references) to help explain the author's points. You should be able to find pictures from websites. If not, you may scan pictures from the text.
- Do not read long passages of text in your presentation unless it is absolutely necessary and you will dissect those passages for us.

Your presentations should be uploaded to Blackboard before class begins, and you must complete your entire presentation with questions answered by 15 minutes after class is scheduled to begin. The presentation should then be uploaded to the Blackboard Discussion Board so that other students may see your presentation.

Presentation Critiques

Students will be required to review two presentations, including the *When Technology Fails* Presentations and the Recommendation Report Presentations. For the *When Technology Fails Presentations*, you will choose the date of your review on the same day you choose the date of your presentation. For the Recommendation Report Presentations, you will be randomly assigned a presentation to critique.

When Technology Fails Presentation Critiques will be due one class period after the presentation was completed, no matter what else is due that class period. Therefore, you should choose the day of your review wisely and plan accordingly.

Recommendation Report Presentation Critiques will be due the class period after all presentations have been completed.

You should submit your presentation critiques via Blackboard both to the Discussion Board and to the Assignments tab.

Your Presentation Critiques should include the following:
- One-paragraph summary of the presentation. Include an explanation of the topic, a few details about the topic, and the purpose of the talk.
- One paragraph discussing the presentation slides. Did the presenter follow all of the guidelines for good presentations? What did the presenter do well? What did the presenter do poorly? Did he or she use animation? Bullet slides? Pictures, diagrams, tables? Overview slides? Were the slides interesting or boring?
- One paragraph discussing the oral delivery of the presentation. Did the presenter make eye contact? Did he or she get lost? Had the presenter practiced the presentation before? What did he or she do well and poorly?

Remember that your critiques are not anonymous, so the presenter will know who has written the critique. Therefore, you should write your critique as nicely as possible. Do not make statements such as "This was the worst [or best] presentation I have ever seen." Instead, say, "The presenter was very good with his eye contact. He constantly looked around the room. However, at several points, he kept his hand in his pocket and stared at the floor."

Your Presentation Critiques should be no more than two double-spaced pages and will be graded on the following criteria:
- Quality of summary
- Understanding of the guidelines for good slides and critique of the presenter's slides
- Understanding of a quality presentation and critique of the presenter
- Quality of writing and use of judicious language to critique the presentation
- Grammar and mechanics

Document Creation Group Project

For this assignment, you will join with two partners to write a 1-2 page handout posted to the Discussion Board and to create a PowerPoint presentation on the following topics:

> **Group 1**: How to use MS Word's outline feature to help write complicated documents.

Group 2: How to paginate a long technical report in MS Word.
Group 3: How to create and label tables, figures and equations in MS Word.
Group 4: How to create an automatic table of contents and list of tables and figures.
Group 5: How to create and import Gantt Charts from MS Excel to MS Word.
Group 6: How to use MS Project to plan work.

Assume that your audience will write a long technical report with the sections listed in Table 2.

Table 2. List of Sections for Standard Technical Report

Letter of Transmittal	• Statement of Goals and Accomplishments
Title Page	• Design and Methodology
Table of Contents	• Results
List of Figures and Tables	• Professional Component
Abstract	• Conclusion/Summary
• Introduction	References
○ Purpose	Appendices
○ Background	

Goal

The goal for your group presentation is to teach the class about your subject. You may reference your handout during your presentation, and you may also ask your "students" to work on their computers during your presentation. Students will then have the detailed handout to help them in the future.

Presentation

Your presentation should not last more than 15 minutes (and it should be as close to that time as possible). You will need PowerPoint slides, but the number will depend on whether you ask students to work on their own computers. Remember that you should spend at least one minute per slide, but you may spend longer than this. Remember to document all sources, including pictures you use on your slides.

Handout

Your handout should follow the guidelines for instructions in *PBTW* (167-190). Use clear explanations and include step-by-step instructions for specific parts. Try to make these look like professional instructions using clear guidelines and a variety of figures or pictures.

Research

Although you may need to research MS Word to gather information on your topic, no part of your handout or presentation should be taken directly from a source without proper documentation. For information on documentation, see *PBTW*.

Resume

Write a perfected resume that you can take to the Engineering Career Fair to pass out to prospective employers. The resume should accurately represent where you are right now to get either an internship or a full-time position.

Formal Business Letter with Technical Definition

Write a formal business letter addressed to your boss, department head, the Dean of the Cullen College of Engineering, or the University President recommending purchase or implementation of a device, software, or system.

Find one area where your place of work or the college or university needs a piece of equipment or should implement a new system. Then write a formal business letter to your boss or the appropriate person at the university explaining why that system or equipment is needed. **Include a technical definition that fully explains the device or system.** Use a problem/solution scheme in the business letter, and follow the context, content, contact form.

Your grade will be based on
- following the formal block letter format
- using a problem/solution scheme to explain the necessity of the device or system
- including multiple paragraphs that use the context, content, contact form for business letters
- explaining the need for the new device or system
- defining the device or system
- grammar and mechanics

Schedule

Pretend that you are a project manager for the University of Houston in charge of building a new prototype dorm room. This new dorm room prototype will be completely off-the-grid, i.e. will produce its own power, recycle its own waste, and collect its own water. A single stand-alone room will be built somewhere on campus to determine the concept's feasibility.

Create a list of milestones and tasks that must be completed in order to complete the prototype. Keep the following in mind: you must find a suitable spot, research the best methods and materials, build the structure, and test it.

Then make the list of milestones and tasks into a Gantt chart that graphically illustrates how long each part will take.

Introduce your schedule with a paragraph introducing the project. Remember to introduce the Gantt chart by name before it appears. List the milestones and tasks in bulleted form before the Gantt chart, but remember that all lists should be introduced by sentences, as well.

Keep in mind that a milestone is composed of tasks. A milestone is a moment in time when a large portion of a project can be demonstrated as complete. Demonstrating that a robot's vision system works is a type of milestone. Tasks are smaller things that must be completed in order to fulfill the milestone.

Your grade for the schedule will be based on the following:
- Evidence of careful thought concerning the project scope
- Clear milestones and tasks that will lead to completing the project
- A paragraph that introduces the project and figure by name
- A clear Gantt chart (figure) that is named correctly and is easy to read

Specifications

For the University of Houston's new prototype dorm room listed above, introduce and then list 20 specifications. Use paragraph form to introduce the specifications and then list them in bulleted form. Remember to be as specific and technical as possible, but do not include technical information without first explaining or giving context.

Recommendation Report

Choose one of the following options and write a recommendation report that explains your choice:
- Installing a dual-flush or conventional toilet
- Owning or leasing a new car
- Drinking bottled water or Houston tap water
- Installing a corporate Macintosh system or Windows PC system
- Buying a hybrid or a conventional car
- Installing solar panels on a home

Consider all aspects of the decision, which may include but are not limited to
- Environmental concerns
- Cost/Benefit analysis
- Productivity
- Social concerns
- Political concerns

Your report should have at least six reputable sources. While some of your sources can be from the web, the majority of them should be from sources that originally appeared in print.

Your completed recommendation report should follow the format in *The Pocket Book of Technical Writing* and should include all front matter: transmittal letter, title page, table of contents, list of tables and figures, and abstract. It should be paginated correctly.

The recommendation report should include at least one figure or table. Remember that it is better to explain material graphically or in tables than to merely write paragraphs.

You will then make your report into a poster and presentation.

Recommendation Report Presentation

Create slides in PowerPoint, and then give a 5 to 8 minute presentation that explains your recommendation for the project above. Follow all of the guidelines for good presentations but remember especially to keep bullet slides to a minimum and to face the audience.

Recommendation Report Poster

Explain your recommendation in a single PowerPoint slide that could be printed out and made into a poster. For this project, you will NOT print your poster but will instead submit your single PowerPoint slide that could be printed if necessary. This project is different from the Recommendation Report Presentation described above. It explains the same information but does it in a stand-alone slide, not in an interactive presentation. Be sure to watch the Youtube videos on posters to be able to successfully complete this assignment.

Joseph Harmier

ID: 0149005

ENGI 2304

Prof. Kala Dunn

Response Journal 1: Broad Education

I am a strong believer in a well-rounded education for all students. I believe an engineering student especially has much to gain from being exposed to diverse subjects such as economics, government, philosophy, English, and psychology. A liberal sampling of these disciplines and others will not only enhance an engineering student's education but also his or her future career as an engineer.

As an aspiring petroleum engineer, I would be delighted to focus my studies solely on the mathematical and scientific intricacies of my chosen specialty. (In engineering, it seems, one can never learn too much!) However, having worked several years and seen something of the world prior to pursuing an engineering degree, I have come to agree with those who assert that our world is a place of business. In one such as ours, driven by business and economic concerns, even a casual observer would agree that few businesses succeed for long without the ability to balance income and expenditures. Consequently, an engineer who wishes to be valued and rewarded by her employer must be a savvy businesswoman concerning the costs and profitability of her employer's businesses and industries as a whole and not just the engineering products. Courses in

economics and business can teach essential knowledge and tools to an engineer wishing for a competitive edge when vying for employment and advancement.

It is universally agreed that English is the language of international business, and an engineers, whether working in the United States or abroad, are expected to effectively communicate in English with an international selection of employers and colleagues. Furthermore, engineers are often called upon to communicate their work to audiences comprised of laypeople who are not trained engineers. Therefore, a mastery of the English language in both its spoken and written forms is indispensible for all engineers. An excellent way to achieve mastery is to take literature and composition courses in the English language.

Without delving too deeply, the subjects of government, philosophy, and psychology all have much to offer an engineer. In our international business climate, an understanding of the workings of foreign governments and their impact on international business is invaluable. The study of philosophy promotes deep thinking on the subject of ethical behavior, to which every engineer must be devoted. Finally, business depends as much upon people skills as it does upon technical competence. The study of psychology can foster human insight, which can be helpful to an engineer when collaborating with colleagues, negotiating a business deal, or managing a team of employees.

In closing, I would like to address a position taken by some who look upon a liberal education for engineers with scorn. They claim that the useful information and skills I have alluded to can be learned in the course of everyday life and that more coursework is not a good use of an engineering student's limited time. Although I agree that a thoughtful observer with ample time can glean a great deal by living, I strongly

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disagree that it is not an efficient use of time to study these subjects in college. A good engineer would not waste time reinventing the wheel. Studying the masters of other disciplines saves engineers (or any person, for that matter) much time in understanding subjects outside of their specializations.

Joseph Harmier
ENGI 2304

Professor Kala Dunn

Response Journal 2: Ethics

In the Arthur Conan Doyle story, "The Adventure of the Engineer's Thumb,"

the protagonist is a young engineer who, desperate for employment, agrees to work

for a mysterious employer under secretive circumstances (Doyle 1892). In the

course of his adventure, he discovers a money counterfeiting operation and is nearly

murdered by the conspirators. He escapes with his life, but he loses one of his

thumbs at the hands of his nefarious employer. Sherlock Holmes assists the young

engineer in revealing the mysteries of the adventure. When examining the young

engineer's choices in comparison with the National Society of Professional

Engineers Code of Ethics for Professional Engineers, it is evident that the young

engineer could have saved himself from much trouble if his choices had followed the

Code of Ethics (NSPE 2007).

Victor Hatherley, the young engineer of the story, makes three crucial ethical

lapses at the beginning of the story. The first lapse is his desperation for

employment. He tells Holmes and Dr. Watson that, despite the suspicious behavior

of Stark, his prospective employer, "I thought of the fifty guineas, and of how very

useful they would be to me." Compare this with the Code of Ethics: "Engineers shall

not promote their own interest at the expense of the dignity and integrity of the

profession" (III.1.e). I interpret that Hatherley is so eager for employment that he

allows himself to overlook clear warning signs from the beginning that Stark was

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not trustworthy and, consequently, inadvertently inserts himself into an illegal operation.

Hatherley's second ethical error comes when, upon the insistence of Stark, he pledges himself to absolute secrecy regarding the details of the business. He was foolish in making such a promise, because the Code of Ethics states under Article II., Paragraph 1.c., "Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except *as authorized or required by law or this code*" [emphasis mine]. He naïvely fails to consider that he may need to refuse the job on ethical grounds, and he gives Stark an unreasonable expectation. Had Hatherley instead told Stark that his secrecy was contingent upon the enterprise's ethical and legal status, Stark may have decided against engaging the young engineer's services, thereby avoiding the drama altogether.

Lastly, even before Hatherley discovers that Stark's operation is illegal, Stark claims that he is attempting to deceive his neighbors into selling their land to him in order to gain access to the valuable mineral that the current owners do not know would make them very wealthy. This information does not faze Hatherley for an instant, even though the Code of Ethics states, "Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise" (II.1.d.). In agreeing to work for Stark, Hatherley appears unconcerned that he is aiding a deceptive enterprise, and he misses an opportunity to extricate himself from the entire business before anything bad happens to him. Although Hatherley would be no

richer had he adhered to the Code of Ethics, he would have at least kept both of his

thumbs.

Doyle, A. C. 1892. The Adventure of the Engineer's Thumb.

http://en.wikisource.org/wiki/The_Adventure_of_the_Engineer%27s_Thumb

(accessed 17 September 2012).

National Society of Professional Engineers (NSPE). 2007. Code of Ethics for

Engineers. http://www.nspe.org/resources/pdfs/Ethics/CodeofEthics/Code-

2007-July.pdf (downloaded 17 September 2012).

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Prof. Kala Dunn

Response Journal 3: Contemporary Issue and Ethics

In Jeff Conant's Earth Island Journal article, "The Promise and Peril of Synthetic Biology," (2012) he writes about some troubling aspects of the burgeoning biotechnology field. He describes the rapidity with which the field has been growing, the significant amounts of venture capital it has raised, and all of the promised (and mostly undelivered) new technologies and medical breakthroughs. However, one troubling aspect of the industry, according to Conant, is how little external- and self-regulation is taking place within the industry. Bio-engineers routinely tinker with cell biology in order to develop new strains of organisms, but it appears that few precautions are being taken with respect to the potential threats posed by such research.

Conant describes the field in this way: "Synthetic biology treats biochemical processes, molecules, and structures as raw materials and tools to be used in novel and potentially useful ways, quite independent of their natural roles." (Conant 2012) In recent decades, bio-engineers have developed microorganisms that consume the oil from industrial spills and that can produce diesel fuel as a waste product. Accompanying the benefits reaped from this research, there is also the threat from "bio-error," as Conant describes it, resulting from human errors or the unintended consequences of releasing genetically modified organisms into nature. (Conant 2012)

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Already there are documented cases of genetically modified crop strains that have cross-pollinated with wild species, resulting in hybrid offspring that carry the laboratory-modified genes, uncontrolled and unmonitored. Presently, there have been no studies that link negative health effects with these "escaped" modified crop genes, but these situations illustrate the potential threat posed should a truly dangerous gene ever escape the laboratory. Conant describes the case of a biologist who died from paralysis after being accidentally infected by a virus developed by bio-engineers. (Conant 2012) However, neither the government nor the federal health agencies have developed working frameworks to asses the threat posed by such organisms or even how to combat them should any escape and prove dangerous.

Conant refers to a commissioned study that found that "at least $20 million to $30 million in government research is needed over the next decade to identify and address the ecological risks of synthetic biology." (Conant 2012) In the meantime, engineers at the forefront of this emerging field have an ethical responsibility to take appropriate precautions to prevent the accidental or intentional spread of potentially life-threatening bio-engineered organisms. Until regulatory agencies have caught up to the industry, engineers must work strenuously to contain laboratory-bred organisms lest any escape with unintended consequences. Furthermore, those engineers who are working on potentially dangerous organisms should concurrently develop vaccines or cures should anyone become accidentally infected. Otherwise, we run the risk of releasing deadly organisms among the population with no means of preventing or controlling the spread of infection. Ethical engineers should at all times keep in mind that they must first serve the public welfare ahead of personal gain or private profit.

Conant, J. 2012. The Promise and Peril of Synthetic Biology. *Earth Island Journal*.

(online Autumn 2012).

http://www.earthisland.org/journal/index.php/eij/article/synthetic_biology/

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Response Journal 4: Contemporary Issues and Life-long Learning

In the October 2012 issue of The Journal of Petroleum Technology, author Vikram

Rao takes as his subject the current debate regarding the impact of shale gas production

on the environment. Presently, there is an intense debate between shale gas producers,

who use hydraulic fracturing to crack open shale gas reservoirs to release the natural gas

trapped inside, and environmental groups who contend that such activity is contaminating

the environment (Rao 2012). Rao was motivated to write this article after seeing the

documentary film, *Gasland*, which is critical of the industry. According to Rao, the film

is partisan and unbalanced in the arguments it makes, and Rao believes that gas fracturing

isn't given a fair hearing. However, Rao concedes that the industry has been equally

defensive when confronted by the concerns of environmental groups, and that neither

side is doing its best job to get at the facts, foster mutual understanding, and work

towards common goals (Rao 2012).

As discussed in the article, in order for both sides to arrive at a mutual

understanding, more data are needed to fully grasp the situation. Both sides have some

facts on their side but not a complete picture. Therefore, each side perceives the most

favorable conclusion that supports their position from these limited facts. This is classic

partisan fighting, and it's a waste of time and energy. Both groups have the good of the

public in mind: The environmentalists want to protect the health of the public and the

environment from negligent companies, and the shale gas fracturing industry wants to supply abundant, inexpensive energy to the community.

The first thing to be done is to gather more data. It's true that methane gas has been found in some aquifers, which could potentially contaminate the water supply (Rao 2012). But although the environmental groups are quick to blame shale gas fracturing, the data don't support this conclusion yet. Methane has been known to naturally leach into the water supply, which makes the data inconclusive. The fracturing industry is quick to point out this weakness in their critics' claims, but the industry has similarly failed to prove that methane gas contamination isn't the result of its hydraulic fracturing efforts. Therefore, neither side can prove its point.

I believe the industry deserves to be scolded the most in this debate. As engineers, they should recognize when data prove a point and when they don't. Unfortunately, they have allowed themselves to become embroiled in a political debate whose urgency requires that they take an unethical position. The additional testing required, although expensive, would be a minor expense in comparison to the vast profits that can be made from selling natural gas. Sadly, these engineers are acting more like businesspeople rather than ethical engineers who protect the public good and are honest in their dealings. However, this is not to say that the environmental groups don't deserve blame as well. When they demonize the energy industry, they also hurt the public good in that they make it more difficult for the industry to supply abundant energy at reasonable prices. Everyone pays more, which can do more harm than good. The environmental groups need to understand that the shale gas fracturing industry is willing to cooperate, but only

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if it perceives that its critics are willing to be reasonable, work together in good faith, and appreciate the good things that the industry does.

Rao, V. 2012. Getting Beyond *Gasland*. Guest Editorial, *J Pet Technol* 64 (10): 18-21. SPE. http://www.spe.org/jpt/print/ (downloaded 18 October 2012).

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ENGI 2304

Prof. Dunn

Response Journal 5

In his article, "Landmark Case: Nigerian Villagers Sue Shell Over Oil Spills,"
reporter F. Brinley Bruton describes the legal action taking place in Nigeria surrounding
an oil spill that plaintiffs are claiming is the responsibility of Shell Oil Company. 11,000
Nigerian citizens have filed suit in the courts of the United Kingdom against Shell, whom
they believe is responsible for an oil spill that occurred off the coast of Nigeria in August
2011.[1] The situation is unclear, with both sides asserting different facts. Shell, admitting
that it did have some responsibility for the spill, claims that it amounted to only 4,000
barrels of oil, whereas the plaintiffs claim the amount "is closer to 600,000 barrels."[1]
Besides the environmental damage caused by the spill, the plaintiffs claim that the impact
to the fishing industry that they depend upon for their livelihoods has been catastrophic.
Shell and the plaintiffs had been in negotiations for months, but these talks broke down.
What is interesting about this case is that the plaintiffs chose to pursue legal action in a
foreign court rather than through the Nigerian legal system. This appears to be motivated
by the Nigerian plaintiffs' mistrust of their government, whom they also hold responsible
because of its perceived corruption and shady dealings with foreign companies.

This situation affects petroleum engineers in many ways: economic,
philosophical, environmental, and social. The economic ramifications are large because

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of the damage to the plaintiffs' livelihoods and because Shell is now threatened with a

lawsuit that could result in a billion dollars or more in fines to Shell.[1] There is a

philosophic (or legal) problem, because it's not yet clear if the plaintiffs even have

standing to sue Shell outside of the Nigerian legal system. The environmental problem is

obvious: The clean-up of this spill and the many that have occurred in recent years could

take decades to complete.[1] Lastly, there is a social problem in that the citizens of Nigeria

belief that their government and Shell willfully disregarded their interests and safety in

the course of business operations.

Although many agents can be blamed for this tragedy and the ensuing legal mess,

petroleum engineers have a role in causing and preventing such problems. Ultimately, the

suit stems from one of many oil spills that have plagued the Nigerian nation for decades.

Those persons who are most immediately responsible for maintaining safety and

environmental protection against oil spills are the petroleum engineers of Shell and the

other oil companies working in Nigeria. These professionals must strive to use their

technical knowledge and industry expertise to minimize or prevent such spills in the

future. It may be that the companies operating in Nigeria are not held accountable by the

Nigerian government, and therefore operate with less care than in other countries. Even if

this is the case, companies and their engineers have an ethical obligation and they must

take responsibility for their actions. Engineers must work hard to protect those people

who are most affected when oil companies make mistakes.

Works Cited

1. Bruton, F. Brinley. "Landmark Case: Nigerian Villagers Sue Shell Over Oil Spills."

msnbc.com, March 23, 2012,

http://worldnews.msnbc.msn.com/_news/2012/03/23/10825305-landmark-case-nigerian-

villagers-sue-shell-over-oil-spills (accessed April 2, 2012).

Sample Recommendation Report

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ABSTRACT

Business enterprises are seeing the value of mobile devices allowing employees to

be away from the office, connected, and updated in real time. To stay competitive,

companies realize the need to keep up with evolving technology changing the way

companies connect with customer and creating a more efficient customer response

time. The choice to stay competitive is profit driven; the cost is minimal compared

staying competitive. The business market is seeing tablets as an emerging platform

for enterprises to stay connected. The two most popular brands are Apple's Ipad

and Microsoft's Surface RT tablets. At first glance the two tablets offer similar

capabilities, such as, emailing, accessing files, printing, and editing documents, but

as a mobile business solution the Surface lacks the corporate support and due to its

infancy lacks the apps businesses require. Apple does offer the IT support and

400,000 plus applications to accommodate any need a company requires. If an app

is not available for a specific need, a company has the option to develop an app

through Apple making the Ipad the ideal mobile business solution.
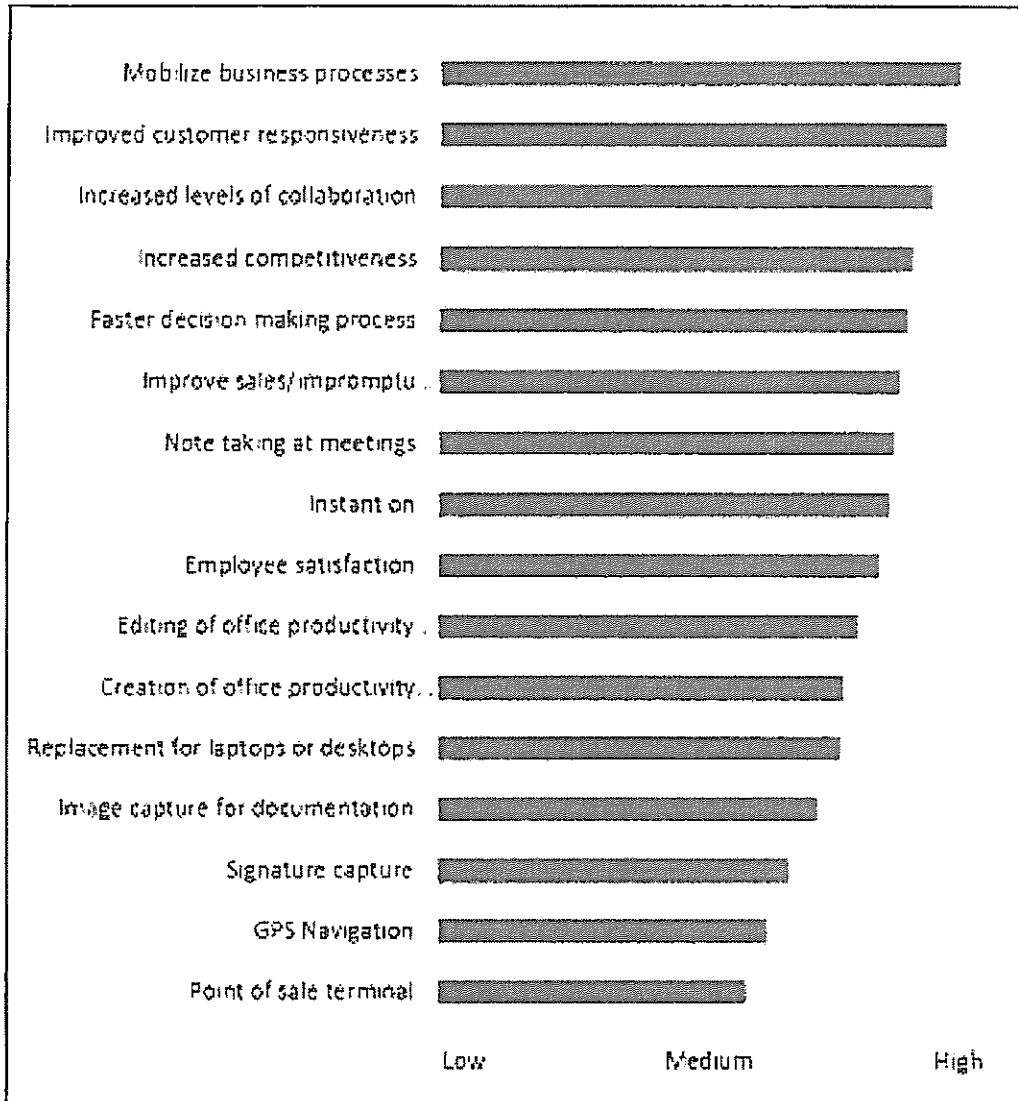
INTRODUCTION

The purpose of this report is to give an informative recommendation for Apple's Ipad tablet or Microsoft's Surface RT tablet to be used in a business environment. This is not to be based on a consumer's general usage or to compare to other tablet devices.

Problem

The traditional work environment is becoming more mobile as research shows that 22% of US companies are using mobile tablets and as of 2013 78% more plan to deploy mobile tablets in the enterprise (Hazleton). As Employees are working outside of normal business hours and have become mobile, tablets provide opportunities to improve productivity by staying connected all the time allowing the ability to share information with customers, colleagues, and also improve how business is conducted with better response to customers, and a drive for new business becoming more competitive. Figure 1 shows the research of key benefits to being mobile.
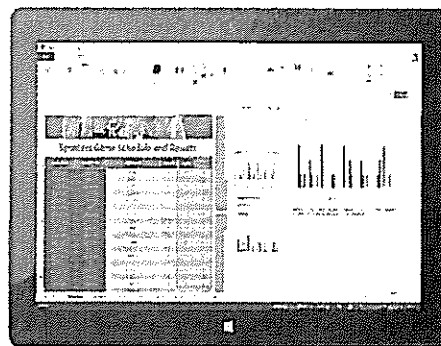
Figure 1: Research of Key Benefits

Scope

The scope of this report is to provide the information needed to make a decision between Apple Ipad 4th gen and a Microsoft Surface RT for commercial use as shown by figure 2, and 3.
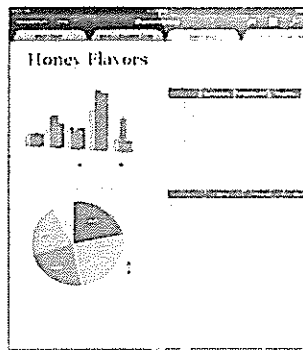
source: Apple
Figure 2: Ipad 4th gen

source: Microsoft
Figure 3: Windows Surface RT

DISCUSSION

Criteria

To stay mobile and competitive, a company must create a criteria based on the tablets cost, hardware, and integration. Being mobile means being connected at all times having the ability to do task as if in the office, such as, access files, create documents, give presentations, collaborate, track, invoice, sell, and manage customers.

Standard Specs

Table 1 displays the general specs of both tablets out of the box.

Table 3: Standard Specs

	Apple Ipad (4th gen)	Microsoft Surface RT
Price	$499	$499
OS	Apple iOS	Windows RT
Battery Life	10 hrs	8 hrs
Software Included	Messages, Music, Reminders, Camera, iBooks, iTunes, Maps, Game Center, Photo Booth, FaceTime, Videos, Safari, Photos, App Store, Newsstand, Clock, Mail, Notes, Siri, iCloud, Calendar, Contacts	Microsoft Office Home and Student 2013 RT Preview1 (Word, PowerPoint, Excel, OneNote); Windows Mail and Messaging; SkyDrive; Internet Explorer 10; Bing; Xbox Music, Video, and Games.
Memory	16 GB flash Memory	Flash Memory 32 GB Integrated RAM 2 GB Supported Flash Memory Cards microSDXC, microSD,microSDHC
Communication	Bluetooth 4.0, 802.11 a/b/g/n LTE (AT&T, Verizon, Sprint)	Wireless Connectivity Bluetooth 4.0, 802.11 a/b/g/n

Source: Apple, Microsoft

Cost

The price point for both tablets is equal set at $499 for a basic tablet, but the Ipad

can communicate via an LTE network when a WiFi network is not available.

Depending on the carrier, size of company and infrastructure the cost can vary for

example AT&T ranges from $20 to $80 per tablet (AT&T), shown by figure 4.

BUSINESS POOLED NATION FOR DATA PLANS

| Monthly Service Charge	Included Domestic Data Usage	Additional Data (per KB)	Messaging Charges	Eligible Device(s)			
				E/AK Phone	Smartphone	Talon	USB Modem/Laptop Netbook/Notebook
$20	300MB • Internet browsing • Personal email	(details illegible)	Pay per message or messaging bundle	x			
$30	>5G • Internet browsing • Personal email	(details illegible)	Pay per message or messaging bundle				
$45	2GB • Internet browsing • Intranet access • Personal and corporate email	(details illegible)	Pay per message or messaging bundle			?	
$60	5GB • Internet browsing • Intranet access • Personal and corporate email	(details illegible)	Pay per message or messaging bundle	x	x	x	x
$80	10GB • Internet browsing • Intranet access • Personal and corporate email	(details illegible)	Pay per message or messaging bundle	x	x	x	x

Source: AT&T
Figure 4: AT&T Data Plan

Hardware

There is no major difference in comparison between the weight and dimension of

the two tablets, shown in table 2.

Table 4: Dimensions and Weight

	Apple Ipad	Microsoft Surface RT
Width	7.3 in	6.77 in
Depth	.37 in	.37 in
Height	9.5 in	10.81 in
Weight	1.44 lbs	1.5 lbs

Source: Apple and Microsoft

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The difference that sets the Surface tablet apart is the extra ports. Microsoft's goal was to make this tablet much like a laptop as possible without it actually being a laptop. Figure 5&6 shows how Microsoft was able to incorporate a USB 2.0 port, micro SD card slot and an HD video out Port.
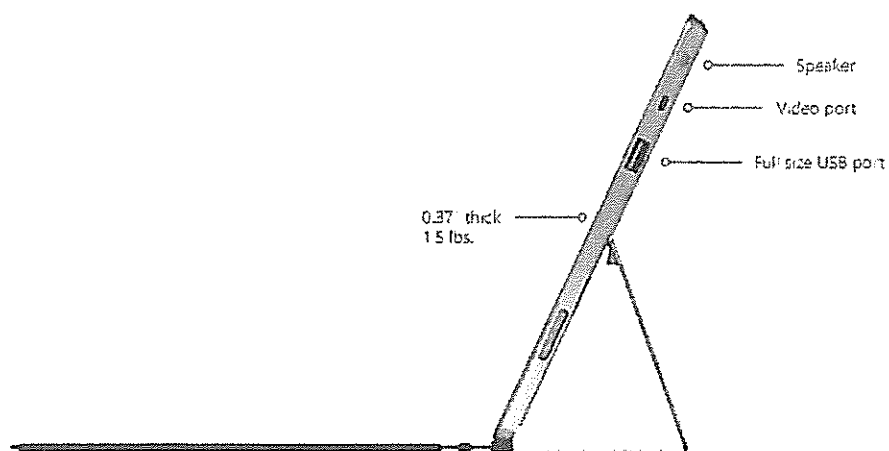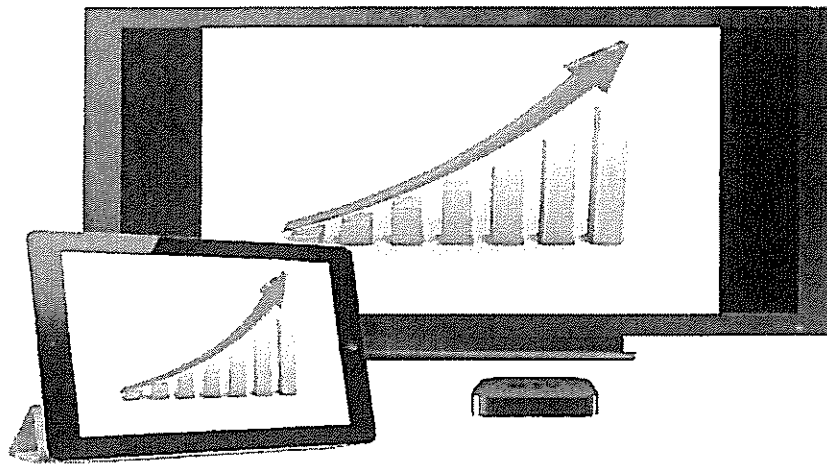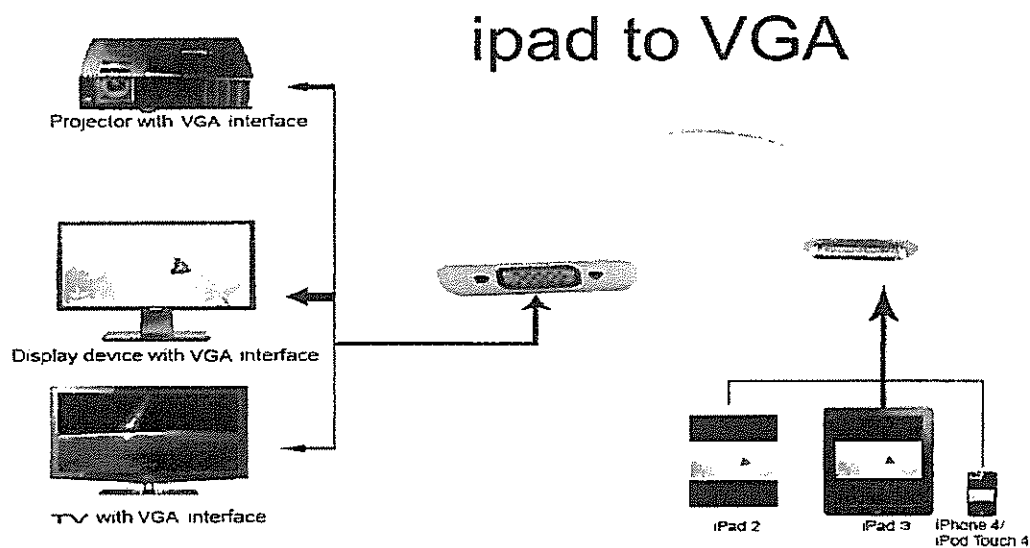

Source: Microsoft
Figure 5: Surface RT USB Port
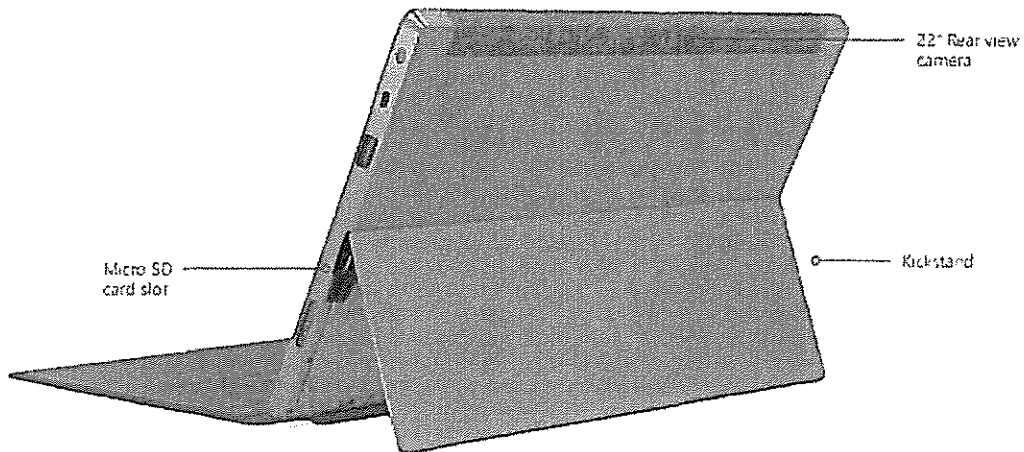
Source: Microsoft
Figure 6: Surface RT MicroSD

The USB port expands the tablet to share networks, and allows it to connect to any USB

enabled device, such as, printers, external hard drivers, key boards, mouse and flash drives.

The HD video port allows for an external monitor (VGA or HDMI adapter required) to give

presentations or share the screen.

The Ipad doesn't have external ports to support external storage or devices, since it

connects wirelessly via wifi, Bluetooth, and stores data in the cloud. Documents can be

printed using Air print (must have Bluetooth enabled printer). Monitor sharing and

projection can be done over airplay using a downloadable app, Apple TV (shown in figure

7), or an adapter (shown in figure 8).

Source: http://byo-app.com/wp-content/uploads/2012/04/apple-tv-and-ipad21.jpg
Figure 7: Ipad and apple tv

ipad to VGA

Projector with VGA interface

Display device with VGA interface

TV with VGA interface

iPad 2   iPad 3   iPhone 4/
                    iPod Touch 4

source: http://www.aliexpress.com/compare/compare-apple-monitor-connector.html
Figure 8: Ipad VGA adapter

Integration

Access Files
Unlike a desktop computer or laptop that is physically connected to a company's enterprise

system, a tablet is virtually integrated using applications or apps for short. The use of apps

allow employees to access files on the go by downloading files from desktop systems, a

hosted online service, or enterprise content management system.

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Powerpoint, it still provides enough features to conduct the same tasks as in desktop.

Another similarity to a laptop is the ability to multitask by having two separate apps open.
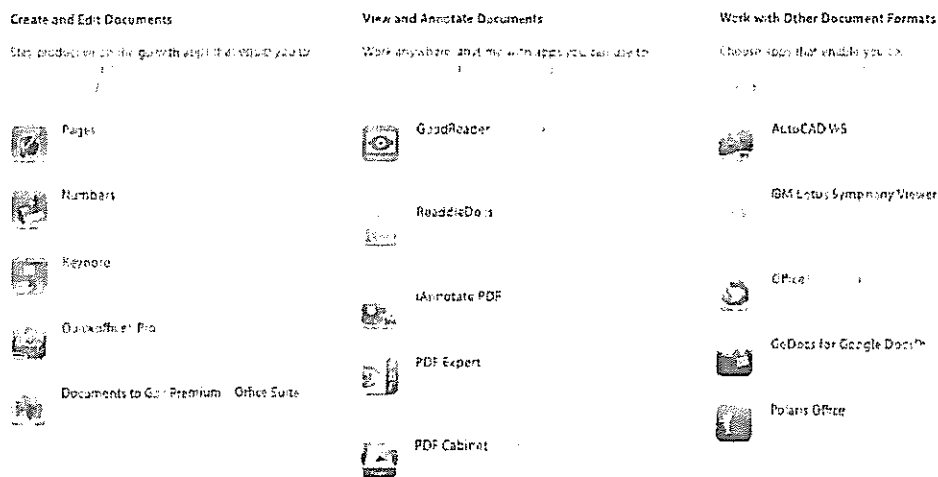
Figure 10 demonstrates how Surface can create a Powerpoint project while looking at data

from an excel sheet.
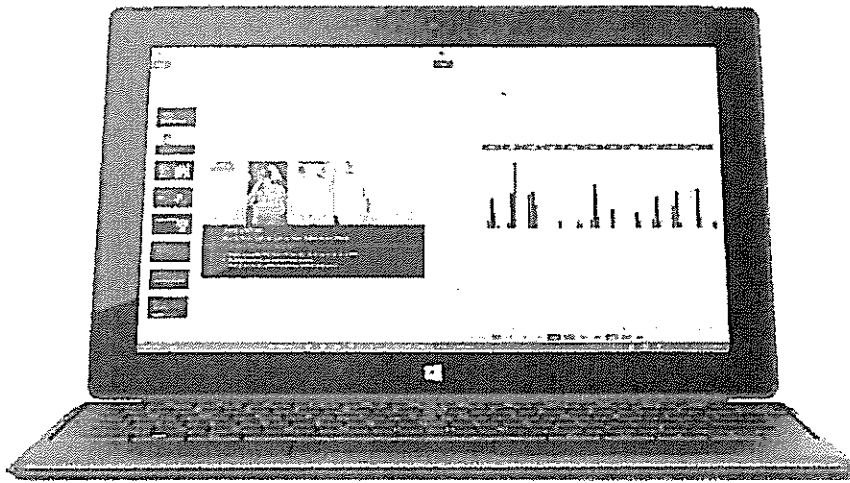
Source: Microsoft
Figure 10: Surface Multi-Tasking

The Surface is the closet thing to a laptop then any other tablet. The Ipad may not come

close to being a laptop, but it does not stop it from doing the same tasks. With over

400,000 app options, the Ipad can create, edit, and work with different document formats,

including Microsoft documents. Figure 11 shows a few apps for commercial and personal

use.

Create and Edit Documents	View and Annotate Documents	Work with Other Document Formats
Pages	GoodReader	AutoCAD WS
Numbers	ReaddleDocs	IBM Lotus Symphony Viewer
Keynore	iAnnotate PDF	Office
Quickoffice Pro	PDF Expert	GoDocs for Google Docs
Documents to Go Premium Office Suite	PDF Cabinet	Polaris Office

Source: Apple
Figure 11: Ipad Document Apps

RECOMMENDATION

The bottom line is when comparing the both tablets there is no differentiating evidence to set the Surface RT and Ipad apart. From a physical perspective, the are almost identical, and looking at the basic functions to expect from any device, they both keep employees connected with emails, and accessing files, and they both allow for document editing, and they both cost the same, so what is the X Factor?

The Window's Surface RT has come the closet to designing an ideal laptop replacement, however, tablets are created in an ecosystem run by applications and promising as the Surface RT is, it still needs some work to iron out the minor quirks. Aside from the lack of apps, the Surface also lacks the business support.

Apple has created an ecosystems ideal for developers to create every application imaginable to support any size of business to create forms, track, invoice, sell, manage

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expenses, and most importantly manage customers. The Ipad makes for an ideal business solution by giving the power and control over to the enterprise and gives the option to the business to develop a custom app made especially for business needs. Apple provides full business support and tech support providing detailed solutions on how to deploy Ipad into the enterprise and answering security questions, Microsoft does not. Figure 12 shows a detailed description of deployment using Exchange Activesync.

Exchange ActiveSync Deployment Scenario

This example shows how iPhone and iPad connect to a typical Microsoft Exchange Server 2003, 2007, or 2010 deployment
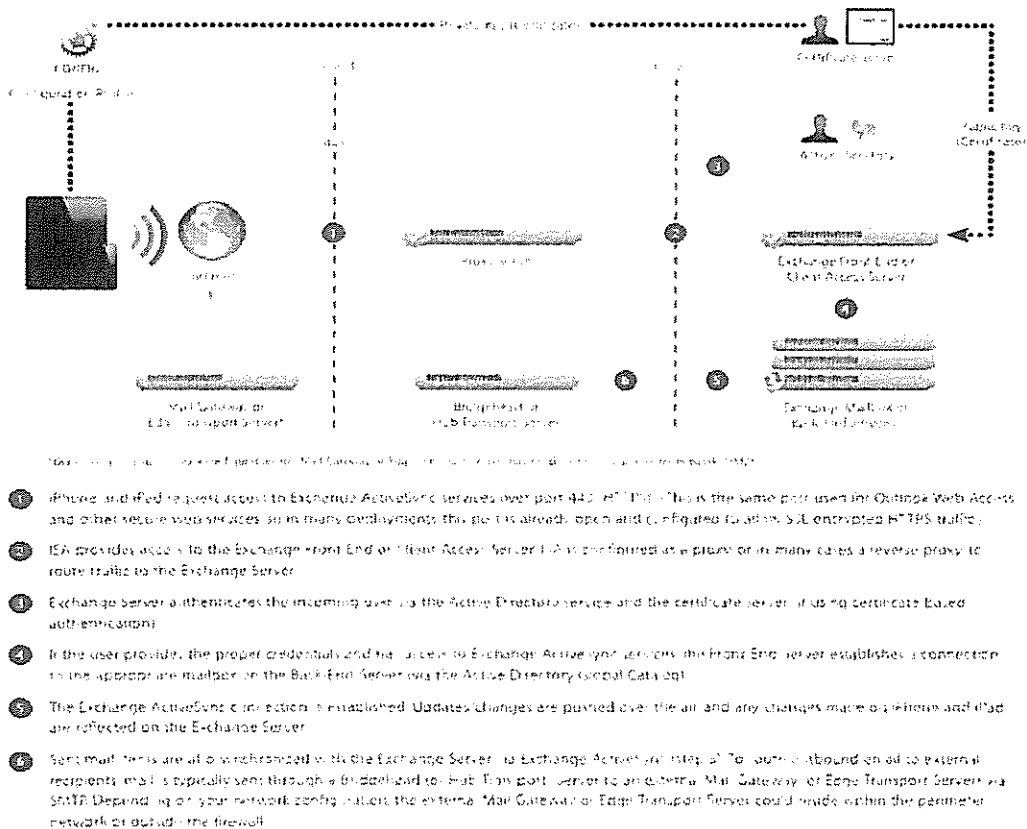
Source: Apple
Figure 12: Ipad Deployment

Works Cited

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