

**Topic 1 • Science Literacy Movie Report (100,000 points)**  
**PHYS-1060 (2) • Fall 2009**

**Purpose**

**Science Classes**

As a student, you have received science and science related information from your teachers. Whether you believe it or not is up to you. But a professional has taken the time to determine what sorts of things are important to know and with how much detail, both for the purposes of the courses you are taking and for the more general purpose of “Science Literacy”, to help make you a better citizen and better able to function in our science & technology driven 21<sup>st</sup> Century.

**How Will I Get Science Information in the Future?**

For some of you, your courses at Western Michigan University may be the last time you will have the benefit of someone directing what science you are exposed to. So, what happens when you get to the “real world”? Well, you may be bombarded with information from all sorts of sources: your job, newspapers, magazines, books, television, radio, movies, the Internet, friends, conversations overheard while standing in line somewhere – you name it. What these methods may lack, though, is the control and expertise of your teachers. You can find all sorts of amazing information on the Internet, but you would have to be very naïve to believe 100% of *everything* you read there. Much of our news is dominated by politics, but how much science do our politicians know? At the moment, we have exactly one professional engineer and one physicist in the House of Representatives (both of these men are from Michigan – you *should* know who they are, but probably don’t), none in the Senate. Most of Congress is made up of lawyers. While there is nothing wrong with studying the Law *per se*, legal arguments do not follow the same rules and purposes of scientific arguments. Therefore there is nothing that requires an environmental cleanup bill, for example, to have anything to do with either the environment or cleaning it up. Likewise, the talking heads we get our news from on TV are not trained in science and technology for the most part. I don’t know what Tom Brokaw or Katie Couric majored in at college, but I can probably bet it wasn’t Physics. They may have, unlike you, been able to graduate from college without ever having had a Physics course. Even on the cable channels, one of the hosts of a computer show I used to watch is now doing a cable show on gardening – go figure.

So how will you evaluate information on your own? This is possibly something that you have never thought about, but Dr. Phil and other professionals have. Dr. Phil’s approach is to have you watch a movie and examine what you see and how it affects you, as well as whether you believe it. (You don’t have to.)

**Learning to “Parse” Information**

Evaluating what you view in this context is very much in line with definition 3 of the verb *parse*:

**parse** (pārs) *verb*

**parsed, pars-ing, pars-es** *verb, transitive*

1. To break (a sentence) down into its component parts of speech with an explanation of the form, function, and syntactical relationship of each part.
2. To describe (a word) by stating its part of speech, form, and syntactical relationships in a sentence.
3. To examine closely or subject to detailed analysis, especially by breaking up into components: “*What are we missing by parsing the behavior of chimpanzees into the conventional categories recognized largely from our own behavior?*” (Stephen Jay Gould).
4. *Computer Science*. To analyze or separate (input, for example) into more easily processed components. Used of software.

*verb, intransitive*

To admit of being parsed: *sentences that do not parse easily.*

[Probably from Middle English *pars*, part of speech, from Latin *pars* (*ōrātiōnis*), part (of speech).]

Source: Microsoft Bookshelf '95 (American Heritage Dictionary of the English Language (Third Edition))

**Dr. Phil’s Definition of Science Literacy**

**science literacy** *n.* An exposure to science in a historical context that serves to allow a person to observe the world around them with understanding, deal with technological applications at home and work, appreciate the distinction between fact and speculation in the media and politics, have a working knowledge of numbers and the scale of the universe, and be able to pursue more information if desired, as a function of everyday life.

Philip Edward Kaldon, Fall 1995

**Movies as a Source of Information**

From all the sources listed in **How Will I Get Science Information in the Future?**, most are very difficult to evaluate. Dr. Phil can’t easily watch hours of VCR tapes or interview your friends along with every paper he reads to compare your impressions with the actual information being presented. So by narrowing the choices to a single medium – movies – we can have a little control and consistency between papers.

For more than ten years Dr. Phil has been building up a booklist of suitable books. Some of these have movies associated with them, which forms the basis of Dr. Phil’s new movielist of suitable science literacy movies. As with the booklist, these movies cover all the Natural Sciences, Engineering, Computers, Technology, Medicine and the Morality and Ethics of using these.

This is a new version of this assignment, where I’ve restricted the movie list to those with some connection to space, the space program, etc. Some of these are based on real stories, some are clearly fiction. Some are blockbusters, some are movies you’ve never heard of. All should be available on DVD for you to see sometime, either borrowed, rented or purchased.

Secondly, we don’t really expect Hollywood to “get it” in Science Literacy terms most of the time. This is where the fun comes in – finding the good stuff and panning the rest.

It is easiest to pick a movie you have *not* seen before. And if you pick a title from the movielist, that’s it. However, since the list is new, it isn’t yet as long as I’d like. So not only will Dr. Phil be adding titles for the next few weeks, you may also nominate other films – you *must* get Dr. Phil’s approval beforehand and be prepared to hand in a draft of your paper at least one week before it is due. If you go ahead and write a paper on a movie that Dr. Phil has not approved anyway, there is a 100,000 point penalty.

**Books as a Source of Information**

It turns out that many of the books on Dr. Phil’s booklist have some connection to a movie or a TV program. Mostly the movies are almost always different than the books. And not only has Dr. Phil read all the books, he has seen all the movies (and owns most of both). This assignment is about the movie.

Having said that, it can be worthwhile to *compare* what is in the book and movie of a particular combination. Sometimes Dr. Phil uses Book/Movie combinations for his second-semester Physics courses (PHYS-1150 and PHYS-2070 at WMU). You can, however, do this on your own *IF* you agree to a change in the rules. Having more to evaluate means you have to write a longer paper – it’s only fair. You also have to split your paper between the book and the movie.

**Scope of the Paper**

This movielist is about movies with connects to astronomy and the space program, both fact and fiction. The list is not as long as I’d like, but some of these are really good movies. You may suggest others, but be prepared for Dr. Phil to so “no”, if a movie does not do what he would like it to do. So no “Mars Attacks” or “The War of the Worlds”, please. We are looking for *science literacy* elements – physics and astronomy to be sure, but also any of the sciences, engineering, computers, technology and/or the morality and ethics of using these.

## The Assignment

- Select a movie from the “approved movielist” or get approval for a different title from Dr. Phil.
- You should not use a movie that you have already seen, it only makes the assignment harder
- Failure to use an approved movie is a 100,000 point penalty.
- Movie titles can be reported in a space provided on the first and second exam . If you don’t have a movie title in mind, or you don’t remember it, you can leave the space blank. This is partly so Dr. Phil can see what people are doing and partly to remind you of this assignment. But it is not required.
- Watch the movie, especially with an eye as to how science is portrayed, what you may have learned that was new to you, whether you believe it to be accurate or whether you feel that the science issues were well explained. Remember that this is an assignment on science and technical literacy, so what you already know (or don’t know) is important.
- Each movie in the movielist will eventually have a brief description of some points that Dr. Phil came up with. You do not have to agree with Dr. Phil. This is an opinion paper and your opinion matters. Personal anecdotes that tie in with what you have viewed are appreciated.
- This assignment is *not* just about Physics. This movielist is about science, engineering, technology, computers and the history, application, ethics, morality, and understanding of it all. So the paper is about this, too. To simply rate the movie based on the “Physics” may be to miss the entire point – or in this case, a good chunk of the 100,000 points.
- Write a **4 to 5** page report, **typed, double-spaced** and a **single simple cover sheet**, on what you viewed, paying attention to the assignment. You can write more if you feel you need to, but **more will not** translate automatically into a higher grade. Good grammar and spelling are expected.
- **OR** If you want to write a paper comparing and contrasting a book with the movie version of the book, in the context of the assignment, you can expand the page count to **7 to 8** pages. (There is no extra credit for doing this, but sometimes it can be fun to really tear into both movie and book.)
- Dr. Phil is expecting that a “B” paper will satisfy the above requirements. Exceptional papers will be rewarded; problems will be deducted.
- Late papers will drop an additional letter grade (10,000 points) per calendar day, starting after 2pm at the end of the Grace Period.
- Papers are due at the start of class, or can be dropped off in Dr. Phil’s mailbox at the Physics Dept. office *by 5pm on the due dates listed below.*

NOTE: there is no problem with many people writing their papers on the same movie.

## Content

This is an assignment in Science Literacy Through Movies. For our purposes, Science Literacy consists of examples or an understanding of concepts in science, engineering, technology, computers, and/or the morality and ethics of using same.

The movies were chosen so that you might be able to write on one of the following topics:

- (1) **What is.** This movie shows examples of existing and current science & technology.
- (2) **What was.** This movie shows examples of science & technology of a past era.
- (3) **What if...?** This movie looks at the consequences of science & technology of some future. Note that it is not required that this future be actually possible in order to be of value. Often Science Fiction uses some artificial setting in order to make a commentary on something current.

Of particular value are (a) the things that you already know about and so can discuss with some experience and (b) things that you know little or nothing about and so must make a judgment about whether you understand or believe these things to be possible. Obviously everyone’s background and experiences are different, so even if everyone chose the same movie, we wouldn’t get the same paper every time.

This is an opinion paper. We want you to take a stand and make an opinion – good or bad – as to relative worth of what you wish to discuss.

We are NOT interested in how cool Tom Cruise is or how wonderful Kate Winslet performs (even if she is one of the finest actresses of her generation). Papers that go on at great length for such lame and non-Science Literacy issues will be penalized.

Back when you were a kid, most book reports consisted of “I read Book X. This happened and then this happened and then this happened.” What such a report really ends up being is just a discussion of the *plot*. The problem with this is three-fold: (1) Dr. Phil has already seen your movie, so he knows how the plot goes. (2) The Steven Spielbergs of Blockbuster fame and best-selling authors like Michael Crichton are popular because they get paid more than you do to write – they’re better at it. Why would Dr. Phil want to read your version of The Andromeda Strain when he can rent the movie or read the book? (3) Just replaying the plot of a novel or a list of topics covered in a non-fiction book or the events in a scientist’s life in a biography does not involve any analyzing of the subject. It is this analysis – thinking about what you just read, thinking about what you already knew and what you have learned – that is the heart and soul of this science literacy assignment.

## **You Can Be as Serious or as Light as You Choose**

Some of the movies are more serious in tone than others. Several of the movies regard rather controversial topics. You are free to avoid them. One semester a student asked if they could write their paper as if they were writing a letter to someone and talking about their experience. Sure – as a writing technique it’s sort of a crutch, but it got the job done. Others have taken a more humorous tone, or have gotten hostile or offended. Just remember that you should be able to justify your comments.

## **You Do Not Have to Agree With Dr. Phil**

Most of these movies are on the list because Dr. Phil likes them *and* they cover some subject areas that should make for good papers. However, everyone’s experiences and preferences are different. Very few people in the world are Physicists or Physics teachers, and there are certainly very few Dr. Phil’s in this world. So it would be surprising if you respond the same way as Dr. Phil did – especially since a good chunk of the book list was read a long time ago when he was a kid and not a Ph.D. Physicist.

Since Dr. Phil asks for your opinion, you are free to give it. You hate the movie. You can hate the assignment. You can decide that you didn’t learn a thing from the movie. Fine. Great. Wonderful. Now just write it up. Give examples, be specific. Some of the very best papers in a particular semester have come from the same book where the students reach completely opposite conclusions.

## **Suggestions**

The following are suggestions for ways to start your paper (or start thinking about your paper) if you are stuck.

### **· Why Did I Choose This Movie?**

For some, the reason might be as simple as “it was the only one I could find”. So everyone’s experience is different. Just be honest.

### **· What Did I Know (Or Not Know) Before I Saw This Movie?**

When you sit down to read a book or watch a movie, there is a lot of stuff that you bring to the table with you – this includes what you have learned in school, your life experiences, all the other books you have read in your life, many hours of watching TV & movies and what you are interested in doing. These are some of the things that will affect how you react and these are some of the things that Dr. Phil would like to know about you, in order to understand your responses.

### **· What Did I Learn (Or Not Learn) From Seeing This Movie?**

Remember, although you might need to discuss a plot point to explain something, your paper is not about what happened in the movie, it is how you reacted to what happened. When we watch a play or a movie or read a novel or play a video game, we often engage in “a willing suspension of disbelief” in order to be entertained. Most people don’t really believe in wizards casting magic spells or the plots in James Bond movies or think that there really is a Darth Vader in a black helmet and cape that can use The Dark Side of the Force, or that terrorists set off a nuclear bomb at a Super Bowl game in

Denver. But going along with the author is something we do to be entertained. Now, if you don't buy it, you aren't going to like it – we need to know this. If you don't think that we really sent astronauts to the Moon (and some people don't), then that will affect how you view any book about space travel. See how this ties in with the previous topic?

• **Pick 2 or 3 Good Examples**

This is a 4 to 5 page paper. You don't have time to discuss every one of the topics in Stephen Hawking's *A Brief History of Time* – so you can't. A rule of thumb might be about a page for your introductions, a page each for two or three good examples and a page of conclusions. Provided you follow the assignment – you've got your four or five pages.

• **Conclusion**

You really do have to wrap up your paper. After all, the premise is that movies are one way that you might learn something about or improve your science literacy, so did you learn anything? Or did you read something that supported what you already knew? How does this assignment or this movie affect your "world view"? Would you recommend this movie to your friends? ... to other students?

**Draft Review (Optional = NOT Required)**

If you wish, you may submit a typed, draft copy of your paper at least one week before it is due. Dr. Phil will take a quick read and look for (1) basic mechanical flaws and structural problems in your paper and (2) how your paper fits in with the concept of science literacy and the purpose of the actual assignment. In return, the clock stops while Dr. Phil has your paper – if Dr. Phil has your paper for two days, then you add two days to your due dates, etc. The draft will not be graded and the submission of a draft is not required. If you choose to use this option, you must turn in your draft with your final paper – if you don't then your final paper won't be graded. This is to keep Dr. Phil from going nuts "as I experience major *deja vu* from thinking that I already had made a comment about some aspect". (Please note that the phrase "rough draft" is never used, which should suggest that the draft be fairly complete as a paper. This is just a free shot before it counts. What could be fairer?)

*Please note: If you choose a non-movielist but approved movie, you MUST submit a Draft.*

**Structure**

**Most of You Will Use Word Processing Software Rather Than Typing**

The assignment describes a "typed" paper, but very few of you will actually use a real typewriter. In fact, most of you will use some version of Microsoft Word, on either a Windows PC or a Macintosh.

**4 to 5 Pages, Double-Spaced, 1" Margins All Around**

The goal here is uniformity of papers for everyone, as well as ease of reading for Dr. Phil.

**Left Justified, Ragged Right Margins, Standard Indent for Each New Paragraph**

This produces a clean left side of the page and is the easiest to read. Turning on "Justify" also lines up the right side of the page, but does so by inserting extra spaces in each line to pad them. This is fine for magazine and book publishing, where they have more control and different rules than you do, but in a paper it makes each line jerky to read and incredibly annoying. Each paragraph should be indented with either a Tab or alternately five spaces. Do not put blank lines between paragraphs – that's padding.

**Readable Font (Courier 12, Courier New 12 – ONLY ALLOWED Fonts)**

One thing Dr. Phil learned at the 2004 Clarion workshop was how much easier it is to read 115 papers when they are all in Standard Format. Now the standard will vary from professor to professor, industry to industry, but it is important to follow the rules. Since papers used to be "typed", a typical standard font in college is COURIER – a non-proportional font that resembles typewriter print. Courier 12 point is large and easy to read, and it is readily available in some form for all printers using Windows, MacOS, Linux.

Most Windows computers use TrueType fonts (TTF), and there the standard is Courier New 12 point. You can use any of the regular Courier "family" of fonts for your paper. Using Arial, Times New Roman, Old Dreadful Number 7, etc., will be penalized.

NOTE: There is no requirement that you "write" your paper in Courier/Courier New – only that you PRINT it out this way. Dr. Phil usually writes his fiction in "prettier" fonts like Garamond 14, Book Antiqua 12, Bookman Old Style 12 and Century Schoolbook – then converts to Courier New for printing.

Courier 12 point font is a very readable font.

NOTE: Handout may be reduced in size. Fonts may not display on the web page.

**Spelling**

Nearly all word processors contain some sort of Spell Checker. Use it. But you must know that computers, like calculators, are basically stupid machines. A spell checker cannot tell the difference between *two, to, too* or *Thieu* – all of which are pronounced the same. Word choice in English is very specific. Misspellings, especially of the author's name (or Dr. Phil's name), looks sloppy, as if the paper was written at the last minute and/or without any care.

**Grammar**

Reasonable grammar is expected in a college paper. This requirement is loosened slightly in some papers, because some students are not native English speakers and some papers may be written in a casual, often first-person style. However, your paper is supposed to be read – if your meaning isn't clear or your sentences don't make sense, your paper's grade will suffer. Microsoft Word and other modern word processors may have a Grammar Checker feature, but unlike a Spell Checker, Grammar Checkers do not work very well and only find some sorts of errors. They work best with certain types of documents, such as company memos, in order to give all company documents that same "feel". Your best bet is to proofread your paper for readability. But even among *good* writers, it can be very hard to proofread your own work. So you can (1) get a friend to read over your paper and see if they understand it or (2) go to the Academic Skills Center and have someone there go over your paper with you.

**Additional Information**

Sometimes students go beyond the book, by looking up topics in the dictionary or encyclopædia, or going to the Web and searching the Internet. This is **NOT** required. But some students get enthusiastic about what they have read and want to know more. So you *may* use additional sources, but don't use them as ways to pad your page count and cut down on how much you have to write. Additional sources and additional information go on *additional pages*.

**No Need For Footnotes**

Again, this is not a formal paper in the sense of many other college papers. It is not required that you footnote, or even give page numbers, for every point that you make or quote (or phrase) you use from the book.

**Four to Five Pages**

Please make a note that "4 to 5 pages" does **NOT** mean that 3¾ pages is "sufficient". It is not. Dr. Phil interprets "4 to 5 pages" to mean FOUR FULL PAGES PLUS YOU MAY BE GOING ONTO THE FIFTH PAGE. You can write more than five pages, but there is no automatic reward for doing so. Some people, like Dr. Phil, just write "long".

**Padding Stunts**

There are all kinds of "tricks" you could employ to try to make those four pages without writing four pages. But since Dr. Phil has specified the margins, line spacing, fonts, and further suggests that you do not indent new paragraphs by thirty spaces or put one or more blank lines between paragraphs, or start the first page halfway down because you are repeating as a header the information that is already on your cover sheet – these "tricks" to pad your paper won't work. And endlessly repeating the same phrases or thoughts will be noticed because your paper will be read. And if you want to include a long quote from your book, the proper way to include a long quote of more than two lines on a page is to *single-space* the quote, so that it is (a) set off, (b) easily showing that it is a quote and not your writing and (c) so that it does not take up an excessive amount of space. Sorry.

Dr. Phil has in the past received papers with 3" top and bottom margins and 2" side margins. This leaves a typing area of only 4 1/2" by 5"; coupled with a 14 point or 16 point font, and even a four page paper under these printing conditions contains almost no text. Hardly seems fair to everyone else.

**It's the worst phrase in the world for the Y2K9 student, already struggling to get to work and maintain a home life: "And there will be a paper due..."**

### So Just What Do You Mean By A "College Paper"?

A college paper is a reflection on you as a student, both in appearance and the quality of the work. It is expected that the writing assignments will be handled in a competent, serious and professional manner. To that end, a college-level paper by Dr. Phil's definition contains the following non-negotiable elements:

- Typed (word processed), double-spaced
- Margins: 1" all around
- Page numbers (by hand is acceptable)
- Single, simple cover sheet
- Readable standard Courier font/typeface
- Good spelling
- Reasonably clean and proofread grammar
- Stapled in upper left-hand corner
- SINGLE-SIDED ONLY!

! ← Staple in upper left-hand corner!

Title of Movie <centered>

Your Name  
PHYS 1060  
Fall 2009  
Date

### The Cover Sheet CANNOT Possibly Be Considered To Be Page 1

(If you can't figure out how to do this, either number your pages by hand, or put the cover sheet at the *end* of the computer file.)

#### MANDATORY DEDUCTIONS FOR FAILURE TO COMPLY WITH THESE PERFECTLY REASONABLE RULES.

NOTE: Given that printing and typing are not always carefree processes, if you find that the printer does not line up properly or is otherwise giving you trouble at the last minute, write "Printer Trouble" on the back of the last page and very briefly describe your troubles; this lets Dr. Phil know that you were under duress and wouldn't normally turn in a bad looking paper. You can then drop off a cleanly printed copy of the paper after the deadline, if one is required. PLEASE! Keep copies of your paper on *two* floppies.

IF YOU USE A REAL TYPEWRITER, then spell checking and corrections are not automatic. Make sure, however, that you go over typed papers and make minor corrections with a pencil.

**IF YOU DON'T CARE ABOUT YOUR PAPER,  
WHY SHOULD DR. PHIL?**

### The Seven Statements

If you ask Dr. Phil what he wants in a paper or how to start, this is what he will tell you:

- (1) Do *not* spend the whole paper summarizing the plot (*assume Dr. Phil has seen the movie – he has*) and
- (2) Do *not* cheat and just read the book instead of watching the movie (*assume Dr. Phil has read all the books – he has – 90,000 point penalty*) (see the assignment for restrictions on book comments),
- (3) You might want to explain how you chose this movie (sometimes it's because it was the only one Blockbuster still had that weekend),
- (4) when you sit down to watch a movie, you always bring something to the table, even it is that you know nothing about the subject, or have never read any science fiction or whatever – it is *this* stuff, what you already knew, that is part of what Dr. Phil would like to know about, plus ...
- (5) what you learned or did not learn from the movie. If fiction, you might tell why you believed it – or did not. If non-fiction, whether the film was understandable.
- (6) Give a couple of examples to show me that you read the movie, but you won't be able to talk about everything. *Again: DO NOT SUMMARIZE THE MOVIE'S PLOT BEYOND 2 SENTENCES!*
- (7) Any kind of personal story or anecdote or current events that connects with your movie is *super*.

**This paper is not about PHYSICS, but about SCIENCE LITERACY (Sciences – including Physics, Engineering, Technology, Computers, and the Morality and Ethics Involved in using same).**

### Due Dates

PHYS-1060  
Topic 1 – A Science Literacy Movie Report  
Due Thursday 3 December at 5pm  
Grade Period Ends: Tuesday 8 Dec. at 2pm

**The Grace Period Means You Can Turn In Your Paper on Friday or Monday, as You Choose. If you submitted a Draft Paper to Dr. Phil, you must include the Draft with your Final Paper. NOTE: Watch Out For Exam 3**

**NOTE: This handout was assembled from previous handouts for book reports and book-and-movie combo reports. This is only the third time Dr. Phil has tried a movie-only science literacy assignment, so consider it still "in development". (That's a Hollywood term!)**

**You are quite free – and encouraged – to suggest additional movies than just the ones listed on the web site, though Dr. Phil's requirements may mean that your fave movie can't be added to the list, even if it's a great/fun movie.**

## A Writing Sample

U-571 is about an American submarine that is sent out on a mission to infiltrate a wounded German U-boat and take its Enigma machine and codebook. The Enigma is the coding machine that the Germans used to keep their messages secret from the Allies. To not get one was to guarantee failure. Anyway, soon after the boarding crew grabs the machine, the American sub sinks and the Americans are stuck on a wounded U-boat. The movie is about what happens to them as they try to get back to America alive with the machine.

I really liked the movie and even though I don't know how submarines work, the subs in U-571 definitely appeared realistic. The actors looked as though they had been trained in the Navy. It had excitement, adventure and tension. My one gripe is that you never get to know the characters. I mean, you how they act and how they feel at any particular moment, but you never really know them. Even though I didn't like that, I think that wasn't as important to the plot when the screenwriters wrote it. I think that what they did want to convey is what makes a captain a captain, because a lot of the movie is the lieutenant's conflict over whether he would sacrifice a crew member or save the rest of them. Overall, this is an exceptionally good movie.

Chris Molnar, age 12  
Sylvan Christian School  
The Grand Rapids Press  
Friday, 28 April 2000  
The Weekend p. 31

This Example Typed in Microsoft Word 95/7.0c, with 1" margins, double-spaced and the Dark Courier 10-point font (to fit on one page), printed on a Hewlett-Packard LaserJet 4ML printer.

So what does a paper for Dr. Phil look like? I've avoided simply copying what an "A" paper looks like, because then I'll just get 25 to 100 papers just like that. But to some extent, it looks a lot like what this young movie reviewer has done regarding the Spring 2000 movie U-571. Now obviously this is a lot shorter than your assignment and Mr. Molnar's agenda was very different than yours – he was a kid reviewing a movie for a newspaper. But in a little over half a page, Mr. Molnar has given a *brief* description of the plot of the story, identified that he doesn't know a lot about submarines *but* that he felt that what was presented was believable, and that the characters, while not well-rounded, behaved in a believable manner. Now explain how you picked your particular movie to watch, add a few pages talking about what you know or don't know about the science, engineering or computer technology (or the morality and ethics of using same) in the book you are reading, and *then* you'll have a Dr. Phil movie report. More or less.

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## Topic 1: The One Page Version (100,000 points)

1. Pick a movie from the movielist. If you don't want to use a movie from the movielist, you *must* get approval from Dr. Phil *and* turn in a Draft Paper at least a week before the due date. If you had Dr. Phil before, you can't use the same movie.
2. View the movie. This is a Science Literacy assignment, not just Physics. So view the movie with an eye toward what you finding about all the sciences, engineering, technology, computers, medicine, and the morality and ethics of using them. Is the author believable? Understandable?
3. Think about what you brought to the table before you view the movie – what you know, your life, etc..
4. Consider what you learned from the movie. Is it new to you? Or is it something you already knew? This is an opinion paper, so what you know and what you think does matter. You do not have to like your movie.
5. Write the paper. Do not just retell the plot or story. Dr. Phil has seen the movie and so have you. Start from there. You might begin by telling why you selected this movie. Then pick 2 or 3 things and talk about them in the context of (3) and (4) above.
6. Be careful to make sure you are talking about the movie your paper is on. Many of these movies have book versions – Dr. Phil has seen them and knows the differences. He has also read all the books. (You may choose to write a paper about both book and movie, adding in a section about the differences between the two, as well as the assignment, but the page count goes up to 7 to 8 pages.)
7. The paper should be written in English with correct spelling and reasonable grammar. Because it is an opinion paper, you may use the word "I" – as in "I think that..." (first-person is acceptable).
8. The paper should be 4 to 5 pages typed (probably on a PC or Mac using a word processor in Spring 2005), double-spaced, with 1" margins all around, a single simple cover sheet, and numbered pages. The cover sheet cannot be page 1, and 4 to 5 pages means that there are at least 4 complete pages of text without extra blank lines at the beginning or end. You may write the page numbers by hand if you wish.
9. Most computer printers and word processors allow you to control the font (lettering) size and style. Acceptable fonts are: Courier/Courier New (12 point). If you have printer problems, contact Dr. Phil. If you typing on a real typewriter, see Dr. Phil.
10. You may, if you want to, turn in a Draft Paper at least one week before it is due, for a free evaluation by Dr. Phil. If you are viewing a movie not on the movielist and Dr. Phil approved it, you must submit a Draft Paper. In either case, if you turned in a Draft Paper and Dr. Phil marked it up, you must turn in that marked up Draft with your Final Paper, or your Final Paper will not be graded. The number of days that Dr. Phil has your Draft are added to your Due Date, so there is no penalty for writing a Draft.

11. Papers are due on Thursday 3 November 2009 by 5pm. You have a Grace Period that extends until Tuesday 8 December 2009 at 2pm – that means you can turn in your paper on that Friday, Monday or Tuesday with no penalty. After that, there is a 10,000 point/day penalty.

12. Major penalties: Writing about the book and not the movie—90,000 points. Writing about a movie that was not approved or on the movielist—100,000 points. Writing only about the Physics in a movie that isn't about Physics—or—Writing only about the plot of a movie with no analysis—the fraction of 100,000 points that the offending section covers. Other minor penalties assessed based on severity/frequency (2000 points ea.)

13. Papers that meet the minimum qualifications are worth at least a "B". Exceptional papers will be rewarded; problems will be deducted.

Dr. Phil likes most of the papers he gets, but it takes some effort to get everyone to take this assignment seriously.

Full Movie Descriptions at: <http://homepages.wmich.edu/~kaldon/classes/ph106-2-bmc.htm>  
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Western Michigan University  
Movielist—Fall 2009

**The Right Stuff (1983)** Sam Shepard, Scott Glenn, Ed Harris, Dennis Quaid • Long and corny, but somehow carries off feeling of the right stuff. Huge difference in feel from *Apollo 13* actually feels right, too.

**Apollo 13 (1995)** Tom Hanks, Bill Paxton, Kevin Bacon, Gary Sinise, Ed Harris • In years to come you will see the scenes from this movie instead of the original NASA recordings because they look more real.

**2001: A Space Odyssey (1968)** • One of the great SF and Stanley Kubrik movies of all time, but long and very deliberate (i.e. slow). A good friend of mine loves the movie but has never managed to stay awake through the whole thing in one sitting. The special effects in this movie made *Star Trek*, *Star Wars* and Industrial Light and Magic all possible, to say nothing of having better apes than *Planet of the Apes*.

**2010: Odyssey 2 (1984)** Roy Scheider, Helen Mirren, John Lithgow • I would be curious to know what people think to see the movie before reading the book. My guess is that parts of the story are hard to follow. Those who have seen the movie second that I know tend to like the movie better. There are many great images in this movie, as well as some terrific quotable lines. You'd never know that Helen Mirren is a British actress with her wonderful Russian accent. Though Roy Scheider in no way resembles William Sylvester in the first film, the sixteen years between films is much more the story here – sterile NASA gives way to much more lively US/Soviet détente.

**October Sky (1999)** Laura Dern • As is typical, compressed from the book rather than a docudrama, but very good. One of the real sleeper movies of early 1999 was *October Sky*, based on this real-life story of a kid who goes from a dead-end future in the West Virginia coal mines to building model rockets with some friends – to getting serious about rocketry and eventually working with the Big Toys that NASA operates. For most of us, the era of Sputnik is as foreign as living in a company town in the middle of nowhere.

**Contact (1997)** Jodie Foster, Tom Skeritt, Matthew McConaughey • Terrific view of how radio astronomers work, and the excitement of discovery. And how we know what we know. (Also some of the worst simulated zero-g floating ever filmed.) But for me, this movie is a fave. On a big screen with Dolby™ sound, you really believe that you are standing over that mammoth rotating machine.

**For Movie Fans and Serious Science Students Who Want to Rip a Movie That Wastes a Great Cast...**

**Sphere ( )** How did Dustin Hoffman get in a dumb movie? Based on a Michael Crichton bestseller, this movie goes into deep undersea to discover – a spaceship which shouldn't be there. More Psychology than Physics, it is at least unusual. And deep sea living has some intriguing counterpoints to living in space.

--or--

**Event Horizon ( )** What should've been an interesting mystery about a starship which returned from a long voyage eventually deteriorates into a horrific bloodbath, wasting a fine cast. Before it gets stupid, though, it does raise some interesting issues.

--or--

**Wing Commander ( )** A lot of movies based on video games come out really bad. In this case, they take a fairly good cast of European veteran character actors, and throw them of the airlock – *Wing Commander* keeps on trying to emulate a naval war movie, but which one? Ships under sails firing broadsides at each other? WW II aircraft carriers? WW II submarine movies? Not only plot, but Physics gets lost in this turkey.

**Starship Troopers (1997)** Caspen Van Diem, Dina Meyer • Robert Heinlein was one of the deans of 1950s and 1960s SF. His early stuff is classic, his later stuff is epic – and very strange. *Starship Troopers* is classic Heinlein, but I was real surprised when they decided to turn it into a movie. Amazingly, Heinlein's odd concept of a future of citizen soldiers, with a rather fascist central government, survives partially intact. And the "bugs" that are out to destroy humanity – they are tough and hard to kill. Oh sure, there are some plot flaws you could drive a battle fleet through and science is sometimes tossed out the window, but as a real gung-ho war movie it is visually stunning, fast paced and exciting. And there's plenty of fodder to praise and shred for your paper, especially with Armor as the book part of the assignment. Oh, and don't ask about using Heinlein's original book for your comparison.

**Some More Space Related:**

**Red Planet**

**Mission to Mars**

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**Countdown (1968)** James Caan, Robert Duvall • Somehow I never saw this early Robert Altman film until recently.

**Engineering and Beyond:**

**Is This Science?**

**Armageddon**

**Deep Impact**

**Documentaries**

**Space Station (IMAX) (2005)** narrated by Tom Cruise • Though the DVD won't give you the wonders of the IMAX 3D version, which is the closest most of us will ever get to actually going into space, this is actually still a pretty good visual documentary about the construction of the International Space Station.

**From the Earth to the Moon (1998)** Tom Hanks produced this after doing *Apollo 13*. It has many parts – you wouldn't have to do all the parts.

End of List • About 15 Movie Titles So Far...

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