

**Student Faculty Committee Report**

Social Science

April 6<sup>th</sup>, 2009

## I. Basic Information

### Committee Members

➤ Students

- Tony Jia – Chemistry/BEM & Student Chair
- Ryan Newton – Mechanical Engineering/BEM
- Nixon Li – Physics/Economics
- Jie He - BEM
- Adi Bhujle – Mechanical Engineering/BEM
- Tommy Morphet – Physics/Economics

➤ Faculty

- Kim C. Border – Professor of Economics, Economics Option Representative
- Jaksza Cvitanic – Professor of Mathematical Finance, BEM Option Representative
- D. Roderick Kiewiet – Professor of Political Science

### Background

The Social Science Committee met a couple times to discuss various issues about the Social Science curriculum as well as the various major requirements. Specifically, we were charged with looking into each major and the major requirements as well as any other issues the undergraduate population has with the current system. Selection of the committee members was mainly based on who wanted to volunteer their services. A collection of BEM and Economics majors was selected. No Political Science major was available to contribute.

Currently, the Social Science curriculum consists of courses from Business, Economics, and Management (BEM), Economics, Political Science, Psychology, Law, and Anthropology. Currently, the only majors offered are in BEM, Economics, and Political Science. No minors are offered in Social Science. Most of these majors are undertaken by students as second majors. These students seek additional studies in real-world finance, business, and politics that the science and engineering majors cannot deliver.

The Core Social Science requirement is usually coupled to the Humanities requirement in what is known as the HSS (Humanities and Social Science) requirement. All undergraduates are required to take 2 Introductory Social Science courses in different disciplines (Ec 11, PS 12, Law 33, Psy 15/16/20, An 22/23, SS 13), 2 Advanced Social Science courses in one or more of the same disciplines as the introductory courses, and 4 additional Humanities or Social Science courses of any

level. Issues from previous years include the necessity of such a rigorous core requirement. We will look into this later.

### **Student Faculty Committee**

On April 6<sup>th</sup>, the committee presented each of the following four issues in Ramo Auditorium. Unfortunately, attendance was not very high for either the committee or the audience. We attribute this to the fact that the presentation was scheduled at the end of the Ramo Auditorium session, as most other students were either getting ready for their major talk or just not interested. In the future, we believe that the Humanities and Social Sciences panel should be scheduled somewhere in the middle of the Ramo Auditorium session. Other than that, the talk covered all the points we wanted to cover. Audience participation was observed, though some comments were not constructive at all.

## **II. Summary of Survey Results**

### **Social Science Majors Survey – 9 Respondents**

We believe that it was not made absolutely clear that double majors were to answer surveys for both of their majors. In addition, the list of Social Science majors that the registrar supplied contained only single Social Science majors. Thus, the survey results may not reflect the sentiment of the entire Social Science major student body. This is why there was such a low number of respondents, despite personally knowing at least 10 students who have already declared a second Social Science major.

Respondents indicated that they would like to see more courses in Real World Business, Law, Macroeconomics, and Game Theory. Currently, Caltech offers few courses in each of these disciplines. The survey also indicated that there are largely no problems with the overall satisfaction with the course sequences, organization, and overlap. Though some students voiced a concern about some courses being offered at the same time. This is something that is unavoidable within any department. In addition, the consensus is that there should not be minors offered. Because each of the majors are so easy to get anyways (Only 4-5 courses above the core HSS requirements), if you are interested in said area, you might as well get the major anyways.

Other suggestions include more alumni interaction so students are more exposed to possible internships or jobs post-graduation. Visiting professors need more structure. On more than one occasion, a visiting professor teaching a course will not be up to the standards of the Caltech undergraduate students. We also require more law courses. Finally, because Caltech has a specialized SS faculty, course offerings should be made more flexible so students can take courses in the specialty of these professors. This would maximize the quality of the courses and majors.

## **Undergraduate Student Body Survey – 421 Respondents (325 Upperclass, 86 Freshmen)**

This version of the survey was geared towards the rest of the undergraduate student body. It is a selected compilation of results from surveys of each major about general Social Science requirements. Because of the nature of the surveys, it was not possible to make statistics or include every suggestion. Thus, we will feature suggestions that were suggested by multiple respondents.

The consensus among non Social Science majors is that the core Social Science requirements are too rigorous. The fact that they are required to take courses in 2 different disciplines is also a sticking point. Other than this fact, the survey results produced mostly complaining and whining, especially by the freshmen, who haven't even taken their required courses yet. We believe that taking these courses are important for the educational breadth of all Caltech students. Thus, the best way to resolve this issue is to maintain the status quo. Unless something drastic changes in the way Caltech views their educational method, they will be there for everyone.

### **III. Issues Addressed**

#### **More Courses in Law, Marketing, Psychology**

Students suggested that we need more courses in Law, Marketing and Psychology. This is partly because of the lack of breadth that the courses offered each term provides. Of course, much of this falls to the lack of faculty required to teach more of these types of courses. In speaking with Professor Kim Border, he says that the current financial situation prevents the hiring of more faculty. It would be feasible if provost Edward Stolper is able to extend some more to the Social Science department, but at this point, it looks like that is not going to happen any time soon. Currently, there are only a handful of Law courses offered. With the increasing interest in Law School post-graduation, Caltech requires more Law courses. With respect to Marketing courses, there do exist a couple (E 102 and E/ME 103), but these are not listed under Social Science, and some students don't know about them. They also would not satisfy any core Social Science requirements. Finally, there is a current search for a faculty to teach Psychology courses.

#### **Updating Course Catalog/Major Requirements**

In looking through the Caltech Catalog for major requirements, one may notice many courses that either haven't been offered for a really long time, or courses that simply don't exist. In both BEM and Economics, there are a couple instances of this happening. This is actually one of the easiest changes to implement, as it only takes a simple request to get it done. Currently, Professor Border says that the Economics option is updating requirements in order to add some flexibility in the curriculum. However, this is mostly under the direction of the curriculum committee, and the Student Faculty Committee has no power over this one. However, something is going to happen in

the near future. In addition, they have been talking to the Applied and Computational Math department about teaching statistics. In the BEM option, Professor Cvitanic has already allowed the both E 102 and E/ME 103 to be included under the BEM Electives section. Previously, in order to take these courses for the BEM option electives requirement required one to get an allowance of credit transfer form to be signed by multiple parties. There were no problems with this, but the new system will eliminate the hassle and time required to get those administrative details done. In addition, students may also substitute the oral and written communications courses from their respective majors in lieu of BEM/Ec/SS 20, the Social Science communications course. Students have always been allowed to do this, but some may not have known this. Now it will be explicitly written in the catalog to reduce future confusion.

### **Transfer Credit for Courses Taken Outside of Caltech**

Students also would like credit for courses outside of Caltech to count for Caltech credit. Currently, there is a system in place, but it is not well known to many. You must bring a plan to a committee on what you plan to take and what requirements that course fulfills. Then, it must be approved in advance before you take that course. In the past, many students don't have time to take courses over the summer because most either have jobs or are doing research. But for the students who do, they sometimes utilize this. There was also a request for a list of possible schools where most courses would be approved. However, this is not feasible. Caltech cannot give out a list of schools for which you can get credit for every course offered there. It would get way too complicated, and may even cause confusion for others. A list of schools where previous students have taken approved courses was requested.

### **Core Humanities and Social Science Requirement**

The Core Social Science requirement is usually coupled to the Humanities requirement in what is known as the HSS (Humanities and Social Science) requirement. All undergraduates are required to take 2 Introductory Social Science courses in different disciplines (Ec 11, PS 12, Law 33, Psy 15/16/20, An 22/23, SS 13), 2 Advanced Social Science courses in one or more of the same disciplines as the introductory courses, and 4 additional Humanities or Social Science courses of any level. Issues from previous years include the necessity of such a rigorous core requirement.

This requirement is actually an institute requirement, and not a division requirement. Thus, the Social Science division has absolutely no power to dictate what requirements should or should not be kept. In the 1920 Trustees' Statement, the trustees indicated that Caltech would not be simply a Technical school. Every student that attended Caltech would be very well rounded in many different fields. Because this is based on the fundamental view of education by Caltech, this is unlikely to change in the near future unless Caltech dramatically changes its educational outlook.

Most non-Social Science major students believe that the breadth requirement as well as the sheer numbers of the requirement is too much. Also, many students are simply not motivated in any of the Social Science courses. The core review committee is also looking into these issues.

### **Other Issues Discussed**

Throughout our discussions, the committee touched on a couple other issues, but these were not deemed nearly as important and were not included in great detail. This includes a Caltech-MBA school connection, where students from Caltech would be able to take MBA level courses at said school. This would only be feasible with business schools around the area, such as UCLA or USC. However, this is in the conception stages and not likely to go anywhere soon. We also suggested that some professors use a “textbook method” for some of their courses. This would only work if all the faculty agree, and some courses don’t even use textbooks, so this would only be feasible on a small scale. Finally, ACM 11 is a course that teaches how to program in Mathematica and MATLAB. This would be useful for modeling in various economics courses. We don’t think that this should be a requirement, but should be a suggested course for all Economics majors.

## IV. Appendix

### Undergraduate Social Science Major Survey Results

**What area would you prefer more courses?** *There are 4 responses* Real world business experience

Law

Macroeconomics

Game Theory

**Are there courses that have time conflicts (with other SS courses or with courses of other departments)?**

*There are 5 responses*

BEM 105 conflicts with Bi 117.

many Ch classes.

It hasn't been that relevant

of course there are conflicts with other courses, but i guess that's kinda inevitable.

Ec 121 conflicts with both Ph 12 and Ph 106, making it impossible to fulfill the requirements for both majors until senior year.

**Overall satisfaction with course organization: Sequence? Overlap? Do classes build on one another well or is there redundancy?** *There are 7 responses* The concepts build well

Sequence is fine, overlap is also fine.

classes build one one another well.

There is some overlap in the intro level classes

it's pretty well-structured

Caltech should offer an actual macroecon sequence - the current one-term course is only offered every other year and is very bad. I like that the offered econ courses are in general very analytical, and that upper-division poly-sci classes can be used for econ credit. I don't like that several of the main econ courses (ex. industrial organization/public finance) are offered in alternating years - those courses should be offered every year for more flexibility and breadth in course offerings. (Or at least they should actually be offered every other year - it seems like several econ courses, like public finance, have not been offered in several years.)

Classes seem largely independent and irrelevant to one another.

**Would you like to see minors offered? If yes, in what?** *There are 5 responses* No, no minors

Yes - law.

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more minors offered in classical science divisions.

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The Econ major requirements are easy enough to fulfill that I don't see any reason to offer a minor. It could increase interest in econ offerings, in which case I'd say go for it, but otherwise I think it's not worth the effort.

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Not really.

**Other suggestions:** *There are 4 responses* More alumni interaction for potential internships

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visiting professors need more structure and coherence of the caltech community.

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Add way more Law classes and make Law at least a minor or something. I can't believe we're in some kind of respectable school with smart people and no Law degree. I mean, I don't, but I'm sure there are many people here who wanna be lawyers.

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Caltech has a very specialized econ faculty (which is why, I presume, we have a terrible macroecon course because we have no macroecon profs). The requirements should be structured with that in mind - the offerings should be made more flexible to allow taking courses in the specialty of the various econ profs, in place of some of the main sequence of econ courses. This would maximize the quality of the courses and generally just make the major more interesting.

## Undergraduate Student Body Survey Results

**If it's not fair, then why not?** *There are 9 responses* I'd rather have the choice to take either humanities or social sciences, not necessarily both. Perhaps I'll feel differently after some social science classes, but I feel like I'm being forced to take something that doesn't interest me in place of something that does... for example BEM in place of an english course

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It's fine to have a hum every term but not fun to take advanced SS (for example) which cover material that you're not interested in

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A bit much, should cut 2-3 classes

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I shouldn't have to average one HSS course every term to graduate. In order to fulfill this requirement, I find myself taking classes that I really don't want to and am not interested in at the expense of courses in my field that I wish I had time for. Since I was a Chem E until last term, I have missed two terms of HSS just trying to fulfill the requirements of my major, meaning I will have to double-up on hums for at least two terms Junior or Senior year, when I'd rather be taking advanced chemistry courses on subjects related to my future career. I am capable of writing well, and while I recognize a need to practice these skills in order to maintain them, I find it a horribly stressful, agonizing experience to have to write a 10-page paper on a subject that I never actually cared about and am only studying because I needed to fulfill requirements.

I suggest cutting the number of HSS courses required by a quarter, making it so HSS courses only need to be taken in 9 terms out of 12 here. This would do much to ease the burden, and would allow more choice in the matter. Perhaps students may even enjoy and appreciate the humanities and social science courses a bit more once they're not forced to take so many of them.

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The order is arbitrary. Also the intro SS classes often don't provide a general introduction to the field (e.g. the human evolution class doesn't introduce students to anthropology) so I don't think the advanced and intro courses should have to be in the same field.

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I think the advanced hums should be able to replace the intro hums.

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Because of the split between advanced humns and SS, if one side interests me more, then I should be able to take more of those classes.

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We are scientists, dont force us to take classes that dont interest us.

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Sometimes taking the intro, then advanced SS is difficult (especially because there is not a lot of consistent availability of intro SS classes throughout the year).

**Are there any areas in which you would like to see more courses? If so, please specify.** *There are 7 responses* maybe psychology

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anthropology, art history

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Languages

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Film - filmmaking

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Music

The courses I have taken (with Prof. Neenan) have been extremely interesting and well taught, more options would be nice.

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We need a social justice course or something to broaden people's minds and encourage open-mindedness and free discourse on campus -- this would be VERY good and is important to improving things on campus overall and students' educations

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Need to offer more SS intro courses and more variety of advanced courses. Not everyone wants to take ec11 (like me).

**If it's not fair, then why not?** *There are 6 responses* Hard to take the advanced SS in same field since intro SS are not consistently offered!

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Two advanced SS in the same field really limits you in a way that I don't think is necessary

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I don't think it's necessary to take two intro ss/hum and two advanced ss/hum in the same area. You can learn just as much taking advances hum/ss without the intro course.

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A little too much. The advanced hum requirement seems unnecessary/too much.

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I think there are too many hum/ss requirements. It's better to allow students to take these courses if they want to but not force them to take one per term (that is a lot!). We didn't come here for hum/ss. A lighter requirement would be much more appropriate.

I don't like that your advanced SS have to be in the same field as the intro. This seems pointless; if the upper level SS need specific prereqs, that's fine, but why force us to limit our exposure to different fields within SS?

**Are there any areas in which you would like to see more courses? If so, please specify.** *There are 12 responses*

Modern global conflicts

language

psychology

Mu,En

Italian Language courses for credit

I would really like to see more art/music courses, but I know Caltech's math and science focus so this might not be realistic.

Econ and BEM.

Law/politics, Korean language

Can't think of any

Anthropology

Psychology

more English courses for particular authors.

More psychology courses should be offered.

**Any other suggestions/comments for Hum/SS:** *There are 5 responses* Please make Hum/SS courses available more frequently rather than offering alternate years or not at all. Very often there are so few options to choose from in a given term that it is difficult to plan a course schedule and Hum/SS classes have to be put off until the next term.

More psychology courses please! Also, a lot of the classes like political science or economics assume previous background in those courses when it's not true for a lot of students.

Not enough offerings. (more law?)

Ec 11 is horribly structured. I think that recitation sections should really be held before the homework for that week's topic is due.

**If it's not fair, then why not?** *There are 13 responses* Way too many!

Overall we take 12 humanities/SS courses.

My friends in the engineering school at Univ. of Michigan have to take 4, and they can pass out of 2 or 3 with AP credits.

I don't understand why, as a heavily math/science school, we need to take 12 required of these courses. It takes away from many other science-related courses I'd love to take but can't because of requirements (especially as a chemE). Why

should I take an English class that doesn't interest me senior year, when I could be taking really exciting/useful courses in my major?

In my opinion, I think the requirement needs to be cut somewhat drastically, maybe down to 1 frosh hum, 1 intro SS, 1 of each advanced, and 2 others.

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There are too many required units of humanities. Caltech is an science/engineering school. Humanities should be an option, not a requirement. At least for me, as a Chem E, I have a lot of required units just in my major. This means I can't take some of the science/engineering classes that are not in my major that I would like to. I wish that I can use my hum units on those classes.

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Too many requirements, cut the number of additional hums required

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They shouldn't require so many Hum or SS units.

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I would like to see first year languages count as something, but I'm not sure how its possible.

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too many, and takes up time when could be taking other stuff (most aren't taught well anyways)

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They are too rigid and do not let us focus on a field of interest in humanities. It would be better to not have such a rigid distribution and rather a set number of requirements for any humanities or social science courses.

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I take more humanities classes than math electives only because the liberal arts have some pretension to importance despite their modern sterility. All my humanities requirements have done is lead to a contempt for what is called humanity.

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Hum's take me a really long time, as my reading speed is in the 1st percentile (I have a diagnosed reading disability). Even though I only take 36 units, and will probably graduate in 5 years because of it, I feel like Hums consume all my time, and actually take away from my ability to learn science. It's depressing, because I came here to learn science, but I'm not able to when I take a hum every term. Furthermore, I have no idea how I will ever complete an advanced hum, since so much reading is involved, not to mention the 4000 word writing requirement. At other schools, I could be done with hums (taking one per term) by my junior year, but here I have to suffer all the time. Although I'm probably in the minority here, I think the hum requirements are really excessive and I'm not benefiting from them.

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I'd like there to be no separate advanced hum and ss reqs, just a combined advanced hum/ss req of 4 classes

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I think the requirement of an average of one hum/SS a term is too much.

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WAY TOO MANY CLASSES!!

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ChE already has a lot of requirements, and I barely have time to complete those.

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**Any other suggestions/comments for Hum/SS:** *There are 2 responses* have only taken frosh hums and ec 11 so not sure about other

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Finding an advanced SS that is interesting and does not conflict with other classes is kind of hard, especially when classes are offered once a year (or even worse, only by announcement).

**If it's not fair, then why not?** *There are 5 responses* Honestly, I could do without the frosh humanities and have the requirement adjusted. It's not that humanities are not important, just some are an utter waste of time and somewhat unavoidable. Frankly, there are hardly 12 truly worthwhile humanities classes.

There are some interesting ones available (both SS and Hum) but I have found that they make it a bit more challenging to take the classes I am really interested in and maintain a reasonable schedule.

Too many

The number required is too high. We're at a technical school. We didn't come here to spend so much time on hums. Hum majors at other schools rarely take more than 2 math or science courses total. Why do we take 12?

I think that it should be easier to pass out of intro classes, especially the intro SS classes, and get credit for advanced SS in that field

I have a skewed perspective because I'm trying to double major, but it's going to be a crunch for me next year to fit in all the hums.

I think the frosh hums could be done away with. Just make them full-fledged hums that people will take more seriously.

**If it's not fair, then why not?** *There are 6 responses* It wastes my unit space. I know hums are designed to make we well rounded. But I dont even learn anything in these classes. I would rather take more interesting EE/CS courses with this free space.

There are very many social sciences that conflict with core and/or other required courses.

I hate writing but I need to be able to write.

I don't like hum / ss classes, and I'd rather spend my time taking classes that I find interesting. I agree that hums are necessary and should be required, but I really don't think it's a good idea to require them EVERY term.

Occasionally, students will end up with a term full of science classes that are just plain brutal. When this happens, I think students should have the option of NOT taking a hum/ss class that term so that they can focus on their difficult, more important classes. I think that they should be able to do this without the "penalty" of being forced to double-up on hums in a later term. For me, the concept of taking two hums at the same time sounds absolutely miserable.

I had to drop my hum last term because I was taking a difficult project class (EE 53) that was eating up all of my time. The class was not required for my major, but I was genuinely interested and wanted to take it for my own benefit. Now I'm going to have to take two hums in a single term next year and it really feels like I'm being punished for preferring EE 53 over the hum.

This shouldn't happen. Caltech should require about 8-10 hum / ss classes so that students can be flexible about when they take them.

It is way too much. Students that are not interested in these classes should not be forced to take one per term. Other schools require much less.

Force us to do too much.

**Any other suggestions/comments for Hum/SS:** *There are 3 responses* More variety and better taught classes would be ideal.

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SS classes seem more valuable and applicable than humanities

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Remove the 'same field' requirement for social sciences.

**If it's not fair, then why not?** *There are 13 responses* NA

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the frosh hum requirements are, in my opinion, a waste of time. I had more thorough and challenging courses in my high school, and the frosh hums just served to add to core and make my freshman year more insufferable. there should be a way to place out of them and start fulfilling the other hum requirements immediately. also, too many hum/ss classes are required for graduation.

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I dislike the Frosh hum requirement. I ended up taking two advance hums during my frosh year, loved them, got A's in both classes, and look every term to see what classes the profs are offering from those courses. In contrast my one frosh hum was tedious, uninspiring, and always felt like an obligation to complete. For the record I took the two upper level div courses without the frosh req taken care of and did better than even the seniors in the class. This goes to show that the frosh hums are not a necessary prereq to do well in the upper division classes as this institution would like to pretend they are.

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Intro hums aren't offered regularly enough to satisfy the intro-advanced correspondence.

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I don't like the fact that we need to take the intro level SS before advanced SS in that same field count. We should be able to take ANY because the intro classes are rarely necessary or important.

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Too many

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Just too many required hums all with the same purpose of writing essays. By freeing up that chunk of required classes, one would get the opportunity to take interesting classes of ones personal liking.

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The number of hums we have to take is not a problem, but it's annoying that your advanced hums have to be in the same subject as your intro hums, or whatever the rule is.

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It's a very large hum requirement for non humanities majors. How many other schools make their non humanities majors take this many hum classes? I agree that hum classes give us variety and breadth, but maybe the requirements could be cut back a little so that we don't have to take one hum every single term to graduate.

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I feel boxed into taking certain classes in my last year here because of the classes I took in previous years. I want to start taking Economics classes for Adv SS, however I didn't have an intro Ec class, so I might not be able to take it for the Adv SS credit. The requirement to take classes in the same field does not help caltech students broaden their base of knowledge!

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Averaging 1 humanity per term is a lot for caltech students. Most people don't care at all about these courses, and as a result, we don't have all that many good courses available.

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I think it's a fair requirement, but it's not well publicized enough. Half my friends have no idea it even exists, and the other half is shaky on the details.

Idea: you should set up some online thing where it shows you some sort of degree audit, with stuff you still need to take in red, before the site lets you sign up for classes. This would force people to be aware of what they still need.

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Too much for the fact that I'd rather be learning more interesting things than spending my time writing bullshit.

**Any other suggestions/comments for Hum/SS:** *There are 3 responses* They are much better than the useless Math courses and some even more useless science courses.

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E11 macro is really stupid

**If it's not fair, then why not?** *There are 7 responses* I don't see why the frosh hum requirement is necessary - few people seem to like them - why not just let people take what they want to, and improve people's attitude towards humanities classes in general?

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Freshmen with significant writing experience should be able to place out of intro hums. Also, the advanced social sciences should not have to be taken in the same field as the intro social sciences due to availability issues, or there should always be at least one intro and advanced social science course offered in every field every term.

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I think 9 total would be more fair than 12 to allow for more flexibility in schedules.

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The hum requirement amounts to 1 hum per term for 4 years. This is an enormous requirement, even for a liberal arts school. It's important to require some hums for breadth, but that requirement could easily be cut in half. Most of the time, hums are taken out of obligation in subjects the student doesn't care about and gets nothing out of. These courses then distract from and prevent students from taking other courses they actually want to take.

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I selfishly want to spend more of my precious time on courses that I'd actually care about. Seriously, I don't think I've learned ANYTHING from Caltech Humanities.

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I don't care in the least about advanced subjects in the social sciences. It's fine to broaden one's base with intro classes, but why why why won't you let me just take classes in my major at some point?

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These requirements are too steep on top of already challenging option requirements.

**Any other suggestions/comments for Hum/SS:** *There are 5 responses* I would like to see the good hums spread out more across the terms. For instance, most of the good Psy and upper level H hums are only offered 3rd term.

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I take them because I have to, not because I want to. I don't know how much they actually help us. Most people already know how to write and communicate.

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The classes are very spotty. The quality depends very highly on the prof (like most classes).

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Be careful with visiting lecturers. Professor Li for BEM 103 in Fall 2008 was horrible.

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Don't listen to all the whiners who complain about being forced to take HSS courses. It's good for people to have a breadth of knowledge.