Report of the
FPC Subcommittee on Sub-term Subjects

May 4, 2016

FPC Subcommittee on Sub-term Subjects

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Glossary of terms

Academic year (AY): the fall, IAP, and spring terms. As per the MIT Registrar's Office the year applied to an AY is the year of the spring semester. Therefore, the academic year that includes Fall 2015, IAP in January 2016 and Spring 2016 is AY 2016.

CI-M: Communication Intensive in the Major

Course (of study): a major, numbered 1 through 24 plus several special programs (see below)

Half-term subject: a subject that spans 6-7 weeks in length and starts either at the beginning of the term or during the midpoint of the term.

H1, H2, H3, H4: used in reference to half-term subjects offered either during the first half of the Fall term H1, the second half of the Fall term H2, the first half of the Spring term H3, and the second half of the Spring term H4.

P/D/F: Pass, drop, fail, especially over their junior and senior years, undergraduate students may register for a total of two elective subjects in which they choose to receive a P/D/F rather than regular grades, where P means C- or better performance.

REST: Restricted Electives in Science and Technology

Subject: a regular curricular offering - synonymous with the term *class*

Partial term subject: synonymous, for the purposes of this report, with the term *sub-term subject*

SA+P: School of Architecture and Planning

SHASS: School of Humanities, Arts and Social Sciences

Sloan: Sloan School of Management

SoE: School of Engineering

SoS: School of Science

Sub-term subject (SBTS): a subject substantially shorter in duration than a full term and typically valued at less than 9 credit units

MIT Courses

Course 1 - Civil and Environmental Engineering
Course 2 - Mechanical Engineering
Course 3 - Materials Science and Engineering
Course 4 - Architecture
Course 5 - Chemistry
Course 6 - Electrical Engineering and Computer Science
Course 7 - Biology
Course 8 - Physics
Course 9 - Brain and Cognitive Sciences
Course 10 - Chemical Engineering
Course 11 - Urban Studies and Planning
Course 12 - Earth, Atmospheric, and Planetary Sciences
Course 14 - Economics
Course 15 - Management
Course 16 - Aeronautics and Astronautics
Course 17 - Political Science
Course 18 - Mathematics
Course 20 - Biological Engineering
Course 21 - Humanities
    Anthropology (21A)
    Comparative Media Studies (CMS) | Writing (21W)
    Global Studies and Languages (21G)
    History (21H)
    Literature (21L)
    Music and Theater Arts (21M)
    Women's and Gender Studies (WGS)
Course 22 - Nuclear Science and Engineering
Course 24 - Linguistics and Philosophy
CC - Concourse Program
CSB - Computational and Systems Biology
EC - Edgerton Center
ES - Experimental Study Group
ESD - Engineering Systems Division
HST - Health Sciences and Technology
MAS - Media Arts and Sciences
ROTC - Aerospace Studies (AS) | Military Science (MS) | Naval Science (NS)
STS - Science, Technology, and Society
SWE - Engineering School-Wide Electives
Special Programs
    Freshman/Alumni Internship Program
    Interphase
    Seminar XL
    Terrascope

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Executive Summary

The focus of the work of this subcommittee is the examination of the emergence of undergraduate and graduate sub-term subjects across the Institute through an understanding of:

1. the overall trends and current situation,
2. the motivating aspirations and goals, and
3. the pedagogical value and the effects on student learning and life of such offerings.

A **sub-term subject** is a regular offering of the MIT curriculum substantially shorter in duration than a regular Fall or Spring term and typically valued at less than 9 credit units. The percentage of the total number of curricular subjects constituted by the combined undergraduate and graduate sub-term subjects between 2007 and 2015 increased from 5% to 8%, though that percentage varied significantly during that period. Also, a significant majority of sub-term subjects are roughly one half of the term in duration and either start at the beginning of the term or somewhere in the middle.

The number of undergraduate sub-term subjects has expanded since 2008. The School of Engineering leads all other schools in this type of offering by a wide margin; more than 4.5 times in 2015 and 3.5 times in 2016 more than that of SHASS, the second leading offering. A major increase in the SoE's portfolio of sub-term subjects occurred between 2014 and 2015 when the number more than doubled from 16 to 37. In AY15, the percentage of undergraduate credit hours offered through sub-term subjects is 3% of all credit hours, while the percentage of student-credits (student-credits = # of students x # of credits) attributable to sub-term subjects was 4% of the total.

Each of MIT's five schools has offered graduate level sub-term subjects since 2008 and several for much longer. In 2008 the Sloan School of Management offered more than three times the number of graduate sub-term subjects of any other school and despite the rise of sub-term subjects across several schools at MIT, most notably the School of Engineering (SoE), in 2015, Sloan still offers 21 more graduate sub-term subjects than the SoE (Sloan, 51: SoE, 30). In AY15, the percentage of graduate credit hours offered through sub-term subjects is 8% of all credit hours, while the percentage of student-credits (student-credits = # of students x # of credits) attributable to sub-term subjects was 15% of the total.

Surveys to the students and faculty were a valuable source of information about sub-term subjects at MIT. Students generally indicated that sub-term subjects are neither significantly more nor less stressful than full term subjects. However students did indicate that sub-term subjects allowed less time for understanding the content, interacting with professors and TAs, and recovery from a missed lecture or bad quiz or problem set result. It was also pointed out by students and faculty alike that sub-term subjects offered the opportunity to take more subjects, often of a specialized and focused nature within shorter increments. Electives were cited as particularly well suited to this kind of class.

The subcommittee completed its work by listing a set of best practices, offering recommendations, and formulating a specific proposal. Best practices include better communication between instructors and students on the rules governing sub-term subjects, especially Add and Drop dates, novel ways in which to offer some flexibility to students in the weighting of grades between assignments and exams, and department vigilance in providing the necessary resources for successful teaching and learning through sub-term subjects.

A series of recommendations include giving students a clear understanding of the grading policy for the class and at least 30% of a student's grade should be recorded and communicated to the student by Drop Date. In addition, grading should be organized in ways that allow all students to restructure the grade allotment between exams, problem sets and other assignments, and the final exam of sub-term subjects.

Also, because of the strong prevalence of half-term subjects the subcommittee strongly encourages the development of future half-term subjects as the primary form of sub-term subjects. Departments should be allowed to experiment freely with sub-term subjects but the regulation of sub-term subjects shorter than half-term will require further consideration beyond the work of this subcommittee. If departments focus their efforts on the development of half-term subjects versus sub-term subjects of smaller or larger increments of the term, an effort to arrive at an institute-wide set of rules for delivering these subjects for maximum learning and teaching value with minimum confusion and difficulty may be achieved.

However, the subset of sub-term subjects *without final exams* and often of shorter duration than half the term are an important element of the MIT curriculum and the subcommittee does not discourage their development. However, as these subjects grow in number throughout department curricula, further investigation of their effect on teaching and learning may be necessary.

The specific proposal offered in the final section of the report is focused on half-term subjects offered during the regular fall and spring terms as the dominant form of sub-term subjects. In AY15, 74% of sub-term subjects that started in week 1 ended roughly in the middle of the term, at the end of weeks 7, 7.5, or 8. In AY 15, 91% of sub-term subjects that started roughly in the middle of term, at the beginning of weeks 8, 8.5, or 9, ended at the end of the regular term. Therefore a significant majority of sub-term subjects are roughly one half of the term in duration and either start at the beginning of the term or somewhere in the middle. This is an important finding because it focused the subcommittee's discussions around half-term subjects as the most promising type of sub-term subject in which to attempt positive and supportive regulation.

The subcommittee unanimously arrived at the need and likely benefit in providing greater clarity on the rules governing half-term subjects at MIT across several issues. For the most part, it seems that the advent of subjects that begin either at the beginning or around the middle of the term and lasting approximately a half-term has been a positive development in both the undergraduate and graduate curricula. Providing a framework in which half-term subjects may operate in a coordinated fashion in concert with regular term rules became a primary motivation in developing the final proposal.

The motivation behind offering a proposal for change is to provide a template for discussion and refinement. While the subcommittee was not specifically charged to make a concrete proposal for change, the members felt strongly that we could offer at least two scenarios (a primary and a secondary) for consideration and further study. These two scenarios, outlined below are meant to prompt productive discussion between professors, students, and the administration on the most appropriate steps to take in supporting half term subjects at MIT.

The subcommittee hopes that other possible scenarios for improving on the current situation may arise from the discussion elicited from a consideration of the recommendations that follow.

While the elements of these proposals are primarily administrative in nature, taking action to provide clarity and minimize confusion brought together all of the core issues that we had discovered and discussed during our examination of sub-term subjects. Therefore the subcommittee committed to making a proposal comprised of three main elements (see pgs. 39-41 and Figures 7-9, pgs. 42-44):

Primary Scenario

1. **Half-term Add and Drop**: new Add and Drop dates for H1, H2, H3 and H4. Add and Drop dates for half term subjects are scheduled at points during the half term proportional to their scheduling during the regular term for full term subjects, therefore;
    - half term Add date is scheduled in the middle of the third week of each half term and,
    - half term Drop date is scheduled at the end of the fifth week of each half term.
2. **Half-term start and end dates**: half-term subjects will begin on the first day of classes of the regular term, or the first day of the 8th week of the Fall term and the first day after Spring Vacation.
3. **Half-Term Final Exam Period**: A designated half-term final exam week will fall on the last week of classes for half-term subjects. This pertains to both the first half of term classes (H1 and H3) and second half-term classes (H2 and H4).

	Begin	Add date	Drop date	FEP		Begin	Add date	Drop date	FEP	
FT* Fall	Week 1	Week 5	Week 11	-						
H1	Week 1	Week 3	Week 5	Week 7	**H2**	Week 8	Week 10	Week 12	Week 14	
H3	Week 1	Week 3	Week 5	Week 7	**H4**	Week 9	Week 11	Week 13	Week 15	
FT Spring	Week 1	Week 5	Week12	-						Week 16

FT: full term

Secondary Scenario

This secondary scenario is the same as the first with the exception of the scheduling of Add and Drop dates. In response to a series of interrelated survey and interview comments regarding the shortness of the half term, the perceived (and real) faster pace of this shortened term, the reduced opportunity for recovery from missing a class or not doing well on an exam or an assignment, this second scenario proposes earlier Add and Drop dates.

1. **Half-term Add and Drop**: new Add and Drop dates for H1, H2, H3 and H4.
    a. Half-term Add dates will fall on the Friday of the second week in each half-term period.
    b. Half-term Drop dates for H1 and H3 will fall on the Monday of the fourth week. Drop dates for H2 and H4 will be the same as the regular term Drop dates in the Fall and Spring terms respectively.

Items 2 and 3 remain the same between the two scenarios.

The subcommittee respectfully submits this report with the hope that it may lead to constructive actions.

1. Examining sub-term subjects at MIT

A **sub-term subject (SBTS)** is a regular offering of the MIT curriculum substantially shorter in duration than a regular Fall or Spring term and typically valued at less than 9 credit units. These subjects may be the result of having reorganized a full term subject into two or more offerings or may be a subject whose scope simply does not require an entire term. A sub-term subject may be required by a department or offered as an elective. It may serve as a prerequisite or not and be a stand-alone subject or one of several comprising a sequence of subjects. Sub-term subjects are found in both the undergraduate and graduate curricula at MIT.

The examination conducted and the resulting recommendations proposed by the Sub-committee on Sub-term Subjects are anchored in a fundamental principle; curricular considerations are first and foremost a matter of learning and teaching. Assessing the emergence of sub-term subjects and their effect on evolving undergraduate and graduate curricula is primarily a question of the value of these kinds of offerings for the learning and teaching environment at MIT. As much as was possible the subcommittee sought out information in various forms, both quantitative and qualitative to inform its discussions on the value of sub-term subjects as part of the critical educational mission of the Institute.

In addition, a critical aspect of the nature of learning and teaching at MIT and any institution of higher learning, is the manner in which the institution regulates and delivers specific curricular vehicles. From the perspective of the student, a new subject is a journey of discovery of the content of that class as well as the pacing, instructional style, grading, and overall experience. The Institute is very attentive to the requirements of communicating the essential elements of a class through the syllabus. Students are most familiar with subjects that cover the full term and therefore students are most familiar with the expectations and requirements associated with these regular full term subjects.

Furthermore, while the primary consideration of the subcommittee was the pedagogical value of sub-term subjects from the student's, instructor's, teaching assistant's, and department's perspectives, there are considerable logistical and administrative considerations that required discussion and evaluation. Non-pedagogical concerns are not trivial in several ways. First, considerations of the stress felt by students and professors related to taking and offering sub-term subjects was of central concern. Various forms of stress, from the friction arising from the interaction between full-term and sub-term subjects to the stress felt by students unfamiliar with these kinds of subjects, were considered and figured prominently in our deliberations and recommendations. Second, pressures on resources and teaching assignments were a topic for consideration especially for those departments that had a long history and/or had made a significant effort to expand their portfolio of sub-term subjects. Third, administrative logistics and accounting of drop and add dates, as well as other issues became a major part of the discussions of the subcommittee and ultimately constituted an important part of our recommendations.

However, it is important to reiterate that the highest priority behind our discussions and the motivation driving our recommendations consisted of the appreciation of the pedagogical value of sub-term subjects at MIT. Early in our discussions, it became clear that these kinds of classes already have an established place in the MIT undergraduate and graduate curricula. However, the success of sub-term subjects and balance between positive contribution to the curriculum and confusing and uncoordinated emergence of this distinct mode of teaching and learning at MIT has not been studied adequately. Early in our work the subcommittee acknowledged the fast proliferation of sub-term subjects and discovered both positive and negative consequences. In essence the

recommendations offered, as the main outcome of this work, are an effort to enhance and support the emergence of sub-term subjects in ways that maximize benefits to undergraduate and graduate students, faculty, and teaching assistants.

On October 29, 2015 the charge[1] for the ad hoc Subcommittee on Sub-term Subjects was finalized and approved by the Faculty Policy Committee (FPC). The charge is the product of deliberations of the FPC in consultation with others at MIT.

The rationale behind an examination of sub-term subjects by an ad hoc committee of the FPC lies in several elements of the duties and responsibilities of that committee, namely[2]:

- *Formulate policy on matters of concern to the Faculty, for approval by the Faculty; interpret and implement policy as approved by the Faculty.*
- *Coordinate the work of the other Committees of the Faculty, establishing liaison with them, providing guidance and direction, and referring issues to particular Committees or establishing Ad Hoc Committees as appropriate.*
- *Maintain a broad overview of the Institute's academic programs, coordinating and reviewing proposals from the Standing and Ad Hoc Committees for presentation to Faculty meeting.*
- *Establish the manner in which the academic program is presented in official Institute publications, delegating to other Standing Committees such parts of the responsibility as deemed desirable.*

The focus of the work of this subcommittee is the examination of the emergence of undergraduate and graduate sub-term subjects across the Institute through an understanding of:

1. the overall trends and current situation,
2. the motivating aspirations and goals, and
3. the pedagogical value and the effects on student learning and life of such offerings.

The intended outcome of this examination is a general characterization of sub-term subjects at MIT for the purpose of formulating recommendations for a reasoned and balanced policy response.

This subcommittee did not prejudge the state of affairs and did not speculate on possible outcomes of our work. It was understood that our eventual recommendations could range from substantial changes to rules and regulations to no changes at all. Despite having some awareness of the contradictory coexistence of opposition for any new constraining regulation as well as the call for greater regularization of the emergence of sub-term subjects, the subcommittee withheld any kind of judgment until as much information as possible was gathered given the time available for the study.

The composition of the subcommittee reflects the desire to engage other relevant committees and diverse MIT sub-communities and viewpoints on the topic. The subcommittee includes the Chair of the Committee on the Undergraduate Program (Prof. Anne McCants), members of both the Committee on Curricula and the Committee on Academic Performance (Profs. Roy Welsch and Scott Hughes, respectively), two faculty members of the Faculty Policy Committee (Profs. George Barbastathis and John Fernandez) an undergraduate student and

[1] See Appendix A for the full charge

[2] Excerpt from 1.72 of Section 1.70 Committees, of the MIT Rules and Regulations

member of the Faculty Policy Committee (Joseff Kolman) and a graduate student and member of the Committee on Graduate Programs (Zoya Bylinskii).

The process of examination included the collection of existing data from several sources, notably the Office of the Registrar and the Committee on Academic Performance, as well as several departments and individuals. Requests for data were ongoing during the work of the subcommittee as questions arose and issues were either resolved or expanded to include unanticipated questions and concerns.

In addition, the subcommittee interviewed many members of the faculty including professors, lecturers and instructors as well as teaching assistants, graduate students, undergraduate students, and staff. Faculty interviews were generally conducted by the Chair of the Subcommittee Prof. Fernandez while direct interviews of students were conducted primarily by Fernandez and Bylinskii. Fernandez also met with the Undergraduate Association Education Committee.

The subcommittee also collected several reports that were relevant to the scope of our work. Fernandez met with department curriculum committee members and chairs to review past reports and ongoing studies relevant to the work of the subcommittee. Reports and internal studies that were directly relevant to this study are the report of the *Task Force on Future of MIT Education: 2013 Student Survey*; *Introducing Modularity in the ME Undergraduate Curriculum: 2.002 Mechanics and Materials Modularization, Final Report, September 17, 2012*; *Report of the IAP Subcommittee, Spring 2013*; *2-A Core Curriculum Study Group presentation*. However, it should be noted that none of these reports completely addressed the full spectrum of issues related to the Institute-wide emergence of sub-term subjects in the undergraduate and graduate curriculum.

For example, on September 17, 2012, the Teaching and Learning Laboratory issued its report on the introduction of modularity in the undergraduate mechanical engineering curriculum[3]. This report evaluated the online delivery of 2.002 in the spring of 2012. As stated in the report, "The larger goals of this project were to modularize 2.002 class content into interchangeable components that could be delivered to students in an online format at any time in any location." Clearly the reach of this project is beyond the topic being addressed in this study in that it includes the significant dimension of online learning and therefore conclusions from that report were not directly included in this study.

As part of the work of the FPC subcommittee on sub-term subjects two surveys were developed and deployed to collect a significant amount of original qualitative and quantitative information and data. One survey was sent to the faculty, the other to undergraduate students. Much of the bulk of the qualitative commentary offered by the MIT community is the result of voluminous text responses gathered from these surveys. The results of the surveys are reviewed in detail in Section 3 and responses from both surveys are contained in Appendix B. Detailed text responses are not included in the Appendix to protect the anonymity of respondents.

Finally, the subcommittee met 7 times between the completion of the charge on October 29, 2015 and the delivery of this report. The last meeting occurred on April 11, 2016. Fernandez met with subsets of the subcommittee several more times.

[3] *Introducing Modularity in the ME Undergraduate Curriculum: 2.002 Mechanics and Materials Modularization.* Final Report, September 17, 2012. Prepared for the Council on Educational Technology. Glenda S. Stump, TLL, MIT.

The typical duration of regular terms at MIT are 13 weeks in the fall and 14 in the spring minus one week for spring vacation. The vast majority of subjects addressed in this report run for 6-8 weeks, roughly one half of the term and start either at the beginning or sometime between the 6th and the 8th week of the term. Almost all of these sub-term subjects are valued as 6 credit units. This report does not examine subjects that are full term or near full term offerings (11-13 weeks in duration) even if they are valued at 6 units.

Figure 1 below shows that in AY15, 78% of sub-term subjects that started in week 1 ended roughly in the middle of the term; at the end of weeks 7, 7.5, or 8. In AY 15, 94% of sub-term subjects that started roughly in the middle of term, at the beginning of weeks 8, 8.5, or 9, ended at the end of the regular term. Therefore a significant majority of sub-term subjects are roughly one half of the term in duration and either start at the beginning of the term or somewhere in the middle. This is an important finding because it contributed to the subcommittee's consideration of the most appropriate scope for providing recommendations.

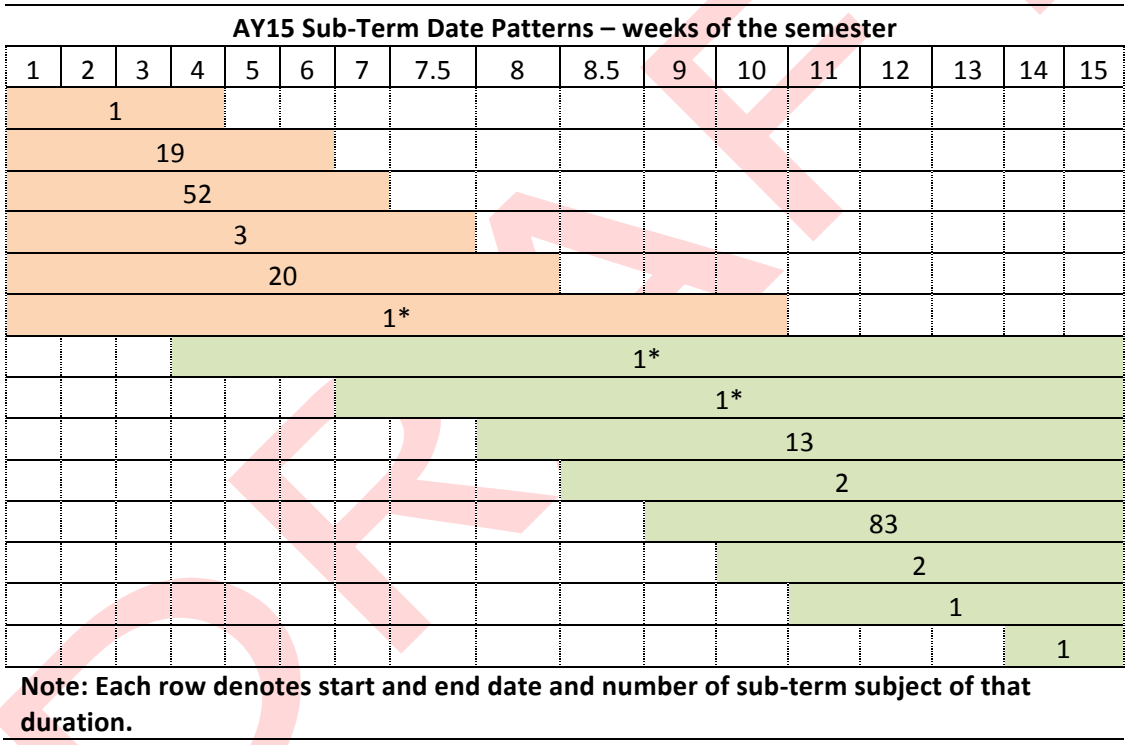


Figure 1. Start and end dates and number of subjects offered of each length.

The 3 classes that are in the minority and do not fit easily into the half term duration, either first or second half of the term (above, marked by asterisks) are 10.491 (starting at the beginning of the term and ending in week 10), 2.S998 (starting in week 4 and ending at the end of the term), and 5.512 (starting in week 7 and ending at the end of the term).

The focus of this study also includes subjects that are considered *modular* in structure and/or intent. A modular subject serves a range of intentions generally oriented toward establishing the subject as an interrelated unit, part of a larger more complex curricular structure and serving in an integrated way with other subjects. Modular

subjects are often, but not always, designed to be taken in sequence or as a set of classes that fulfill a larger curricular goal. Modular subjects are often sub-term in duration and credit value. However, all sub-term subjects are not necessarily modular. For example, many sub-term subjects are stand-alone and not necessarily directly related to a set of other subjects or considered "modules" of a larger curricular structure.[4] These are subtle distinctions that vary across schools and department. In any case, the distinction between modular and non-modular is less important than the intent of this study to address sub-term subjects, including modular offerings, as a distinct pedagogical entity with particular opportunities and challenges.

Currently, issues abound as the emergence of sub-term subjects has spread across all five schools at MIT. While the number of sub-term subjects still remains a small proportion of the total offered at MIT, there has been a steady increase in the number of these kinds of subjects in both undergraduate and graduate programs.

Most of the examination of sub-term subjects in this report examines the issues surrounding undergraduate sub-term subjects separately from those of graduate sub-term subjects. While there are general similarities in both kinds of offerings, the many differences require separate consideration.

Furthermore, the perspective of Teaching Assistants is also treated separately from undergraduate and graduate students, and faculty instructors. This particular community highlights several important issues that are distinct from the concerns of the others.

Sub-term subjects are also offered during MIT's Independent Activities Period. However, these subjects are much shorter than the typical 6-week duration of sub-term subjects offered during the regular fall and spring terms and furthermore IAP is not a regular term, it is an activities period so this examination does not take IAP into account. A review of the state of IAP was conducted in Spring 2013[5] and arrived at recommendations that do not overlap with this study. Also, the subcommittee did not examine subjects offered during the summer term as this was considered beyond the scope of the subcommittee's charge. Further work is needed to address the evolution of the curriculum during these two important periods.

2. Recent history and current state

Again, for the purposes of the subcommittee's work, a **sub-term subject** is a regular offering of the MIT curriculum substantially shorter in duration than a regular Fall or Spring term and typically valued at less than 9 credit units. The origins of these kinds of subjects are varied and include offerings across undergraduate and graduate programs. For the most part, undergraduate subject offerings have emerged in one of three ways:

1. through the splitting of an existing term length subject into smaller offerings (1.018A and 1.018B from 1.018);
2. through a general effort to create a series of integrated modular sequences in a department (e.g. Mechanical Engineering) or entire school (Sloan School of Management) and;
3. through the identification of a particular subject, often a specialized subject, in which a duration of less than a entire term is preferable.

[4] The designation of modular subjects as a subset of sub-term subjects is primarily intended to allow inclusion of subjects that do not have modular aspirations or intentions.

[5] *Report of the IAP Subcommittee*, Spring 2013, Lisa Steiner, Chair.

All of these contribute in different ways to a variety of student interests including providing greater flexibility of choice and curricular pathways through a degree program, customization of degree and ability to focus on particular subjects over others, enhanced options and lower costs for exploration of subjects. For the faculty the interests include the ability to offer a greater variety of subjects within a degree program; shorter, more concentrated examinations of topics; and a shorter commitment to teaching.

While graduate sub-term subjects are now offered across the Institute, the Sloan School of Management established an early commitment to these kinds of subjects, offering roughly 4 times more than any school between 2008 and 2010. At Sloan the emergence of these offerings was motivated by the combination of a reassessment of the dominance of full term length subjects as the norm and the recognition of the value in establishing another norm of shorter subjects tailored to improve teaching and learning. At Sloan this was accompanied by the Sloan Innovation Period (SIP) which occurs at the midpoint of each semester and provides students with an intensive week of experiential leadership learning, as well as exposure to faculty research.

Figure 2 below illustrates that trend that the number of undergraduate and graduate sub-term subjects has been increasing across the Institute though, as is shown later, the bulk of this increase is concentrated in a few departments and programs. The number of sub-term subjects in the undergraduate program has increased more than graduate offerings, from 13 to 51 (390%) versus 84 to 114 (136%) respectively, between 2008 and 2016.

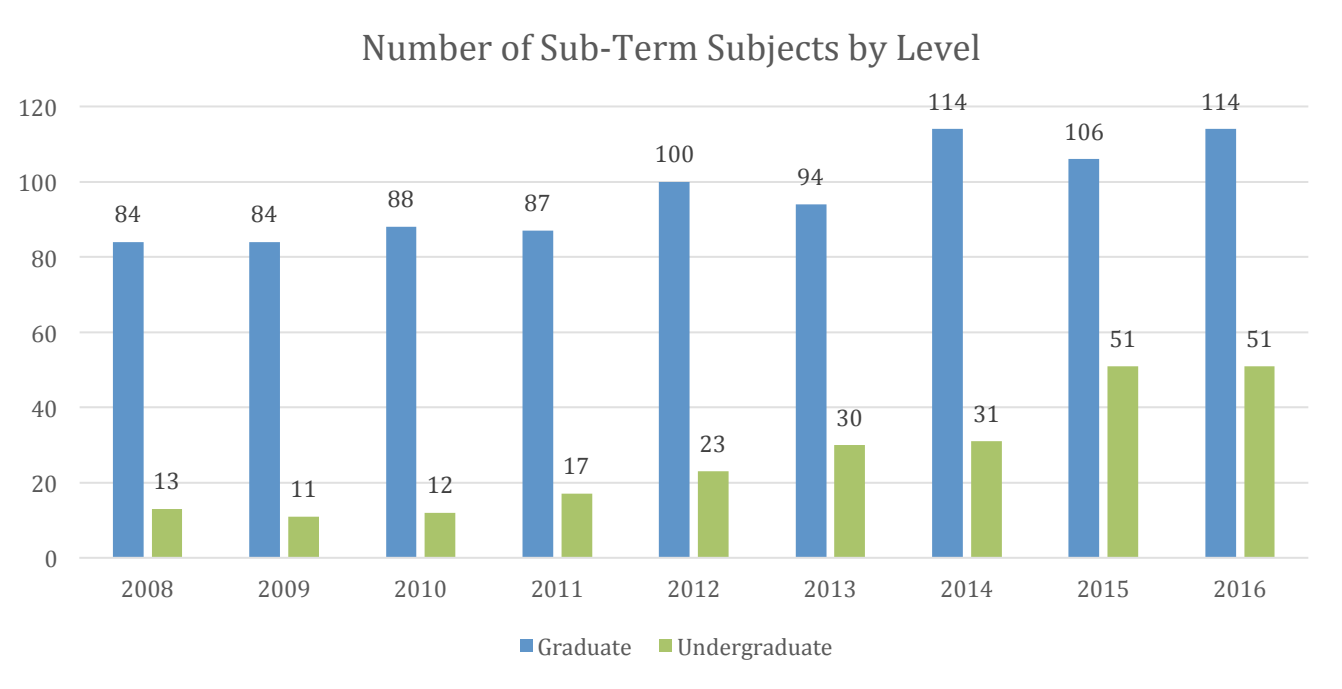


Figure 2. Total number of annual graduate and undergraduate sub-term subjects 2008-2016.

Table 1 shows that the percentage of the total number of curricular subjects constituted by the combined undergraduate and graduate sub-term subjects between 2007 and 2015 increased from 5% to 8%, though that percentage varied significantly during that period.[6] What is important to note is a general increase in the proportion of sub-term subjects as part of the regular curriculum.

Table 1. Number of full term subjects, and number of sub-term subjects and percent of total, 2007-2015.

Spring (SP) Fall (F)	# of full term subjects	# of sub-term subjects	Sub-term subjects % of total
2007 SP	1014	50	5
2008 FA	971	28	3
2008 SP	1025	53	5
2009 FA	1027	35	3
2009 SP	1048	50	5
2010 FA	996	39	4
2010 SP	1000	47	4
2011 FA	938	36	4
2011 SP	1003	57	5
2012 FA	987	35	3
2012 SP	1032	60	5
2013 FA	1018	44	4
2013 SP	1039	66	6
2014 FA	1005	53	5
2014 SP	1053	70	6
2015 FA	950	67	7
2015 SP	1009	90	8

Sub-term subjects as a percent of the total are generally 1 to 2 points lower in the Fall term than the Spring term. The absolute number of sub-term subjects offered across the Institute ranged from a low of 28 subjects in the Fall of 2008 to a high of 90 in the Spring 2015.

[6] Slight discrepancies in the data represented in the tables and figures that follow are due to varying definitions of sub-term subjects used in different databases. Generally, these variations do not change the overall conclusions.

Table 2. Number of full term subjects, and number of sub-term subjects and cumulative number of students enrolled in full and sub-term subjects and sub-term percent of total, 2007-2015.

Term	# of full term subjects	# of sub-term subjects[7]	Sub-term subjects % of total	Cumulative number of students enrolled in full term subjects	Cumulative number of students enrolled in sub-term subjects	% of total enrollments in sub-term subjects
2007 SP	1014	50	4.7%	24809	2387	8.8%
2008 FA	971	28	2.8%	24611	1314	5.1%
2008 SP	1025	53	4.9%	24597	2754	10.1%
2009 FA	1027	35	3.3%	24849	1655	6.2%
2009 SP	1048	50	4.6%	24933	2903	10.4%
2010 FA	996	39	3.8%	24270	1866	7.1%
2010 SP	1000	47	4.5%	24923	2435	8.9%
2011 FA	938	36	3.7%	24586	2005	7.5%
2011 SP	1003	57	5.4%	25573	3099	10.8%
2012 FA	987	35	3.4%	25382	1614	6.0%
2012 SP	1032	60	5.5%	26264	2922	10.0%
2013 FA	1018	44	4.1%	26311	2032	7.2%
2013 SP	1039	66	6.0%	27508	2897	9.5%
2014 FA	1005	53	5.0%	26237	2649	9.2%
2014 SP	1053	70	6.2%	27937	2884	9.4%
2015 FA	950	67	6.6%	25887	3434	11.7%
2015 SP	1009	90	8.2%	27239	3294	10.8%

Another measure for understanding the curricular impact of sub-term subjects is an accounting of the number of students enrolled in sub-term subjects in relation to all subjects. Table 2 presents data on the cumulative number of students enrolled in subjects at MIT. The measure is a simple one; the columns show the summation of enrollment numbers for all regular full term subjects, sub-term subjects, and the percent of the total of sub-term subject enrollments. For our purposes, a useful name for this measure could be the *footprint* of the subject in the regular curriculum.

This measure shows that the student footprint ranges from a low of 5 percent Fall 2008 to a high of 12 percent Fall 2015. Table 2 shows that the percentage of the cumulative total number of students enrolled in full term versus sub-term subjects reached double digits in the Spring semester 2008 but was as low as 6 percent in the Fall semester of 2012.

[7] This column shows the number of sub-term offerings significantly below those in Figure 1. This is due to the exclusion of several Sloan sub-term subjects. However, the general conclusions do not significantly change.

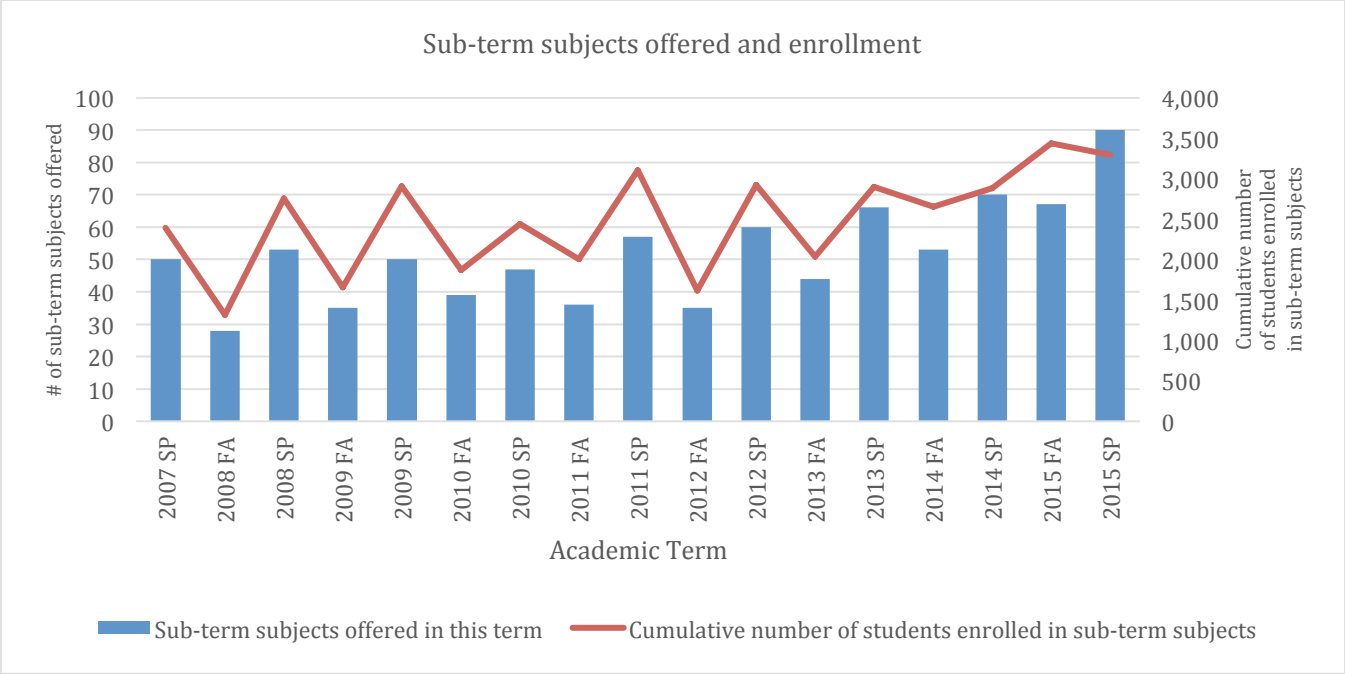


Figure 3. Number of sub-term subjects offered and cumulative enrollment.

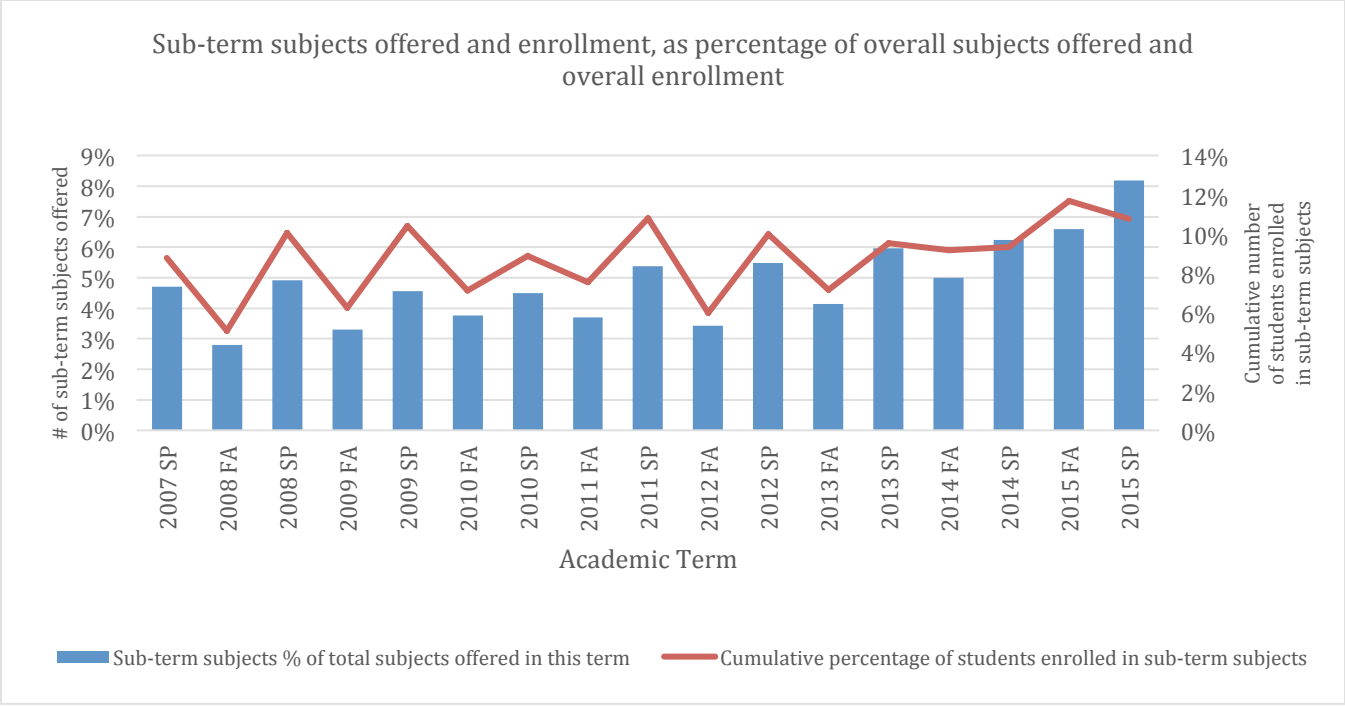


Figure 4. Sub-term subject percentage of total and cumulative percentage of students enrolled.

Undergraduate sub-term subjects

As shown above, the number of undergraduate sub-term subjects has expanded since 2008. The School of Engineering leads all other schools in this type of offering by a wide margin; more than 4.5 times in 2015 and 3.5 times in 2016 more than that of SHASS, the second leading offering. A major increase in the SoE's portfolio of sub-term subjects occurred between 2014 and 2015 when the number more than doubled from 16 to 37.

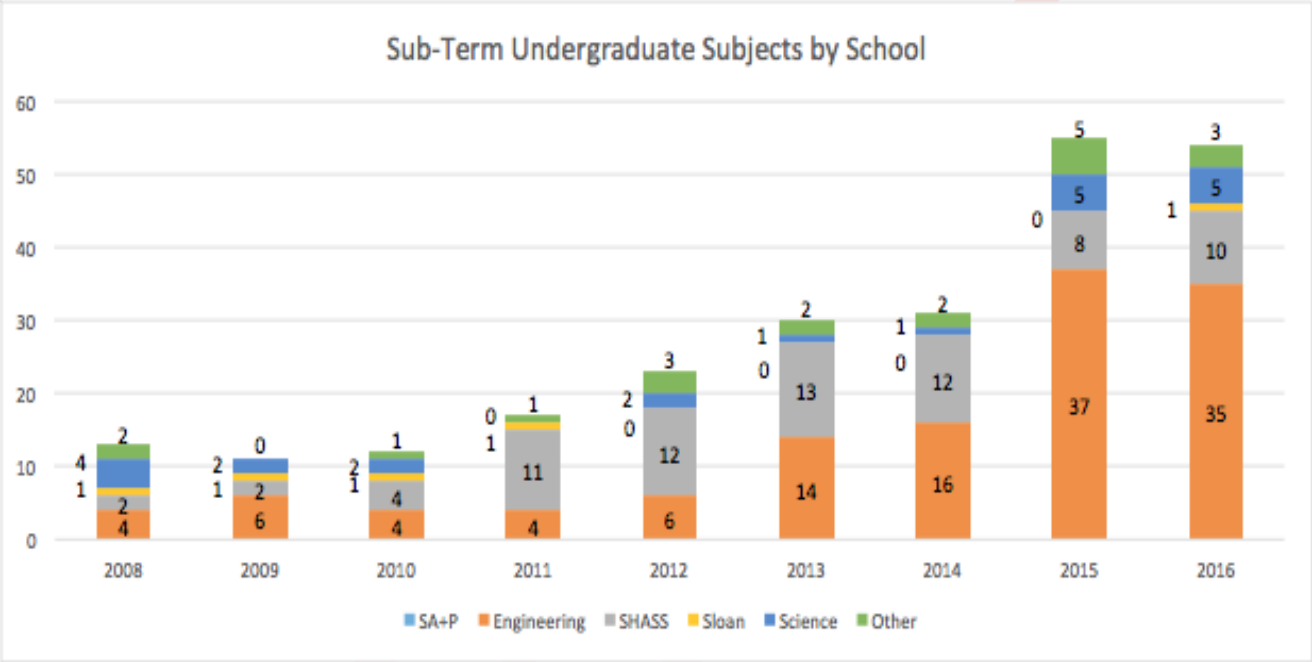


Figure 5. Total annual undergraduate sub-term subjects offered in each school, 2008-2016.

A further measure of the teaching and learning footprint of sub-term subjects in the curricula of each school is the number of student-credits resulting from sub-terms subjects. As used below a student-credit is equal to the number of students enrolled in a particular subject multiplied by the number of credits that subject offers. For example, 100 students taking a 9 credit subject results in a total of 900 student-credits.

Table 3. AY15 total undergraduate units (full term + sub-term), percentage of units offered through sub-term subjects, and full term and sub-term student-credits (number of units x number of students enrolled).

AY 15 Total Undergraduate Units						
SA+P	Engineering	SHASS	Sloan	Other	Science	Total
693	3,107	5,159	234	235	2,118	11,546

AY 15 Percentage of Undergraduate Credit Hours Offered Through Sub-Term Subjects						
SA+P	Engineering	SHASS	Sloan	Other	Science	Total
0%	9%	1%	0%	0%	1%	3%

AY 15 Undergraduate Student-Credit Totals							
	SA+P	Engineering	SHASS	Sloan	Other	Science	Total
Full Term	10940	146248	91502	18243	3020	85517	355470
Sub-term	0	12155	375	0	0	1056	13586

In AY15, the percentage of undergraduate credit hours offered through sub-term subjects is 3% of all credit hours, while the percentage of student-credits (student-credits = # of students x # of credits) attributable to sub-term subjects is 4% of the total.

The following is a sampling of undergraduate sub-term subjects that are modular in design, fulfill a General Institute Requirement, or fulfill a department degree program.

Subjects with a Modular Design: Department of Chemistry Lab Modules

Students register for these subjects as usual, but the department administers the registration of students for each module of these subjects. Each subject contains three modules; each module has its own prerequisites, which are identified in the subject descriptions. Students earn 12 units of credit upon completion of each subject.

5.35 Introduction to Experimental Chemistry (Institute Lab)
5.36 Biochemistry and Organic Laboratory (CI-M)
5.37 Organic and Inorganic Laboratory
5.38 Physical Chemistry Laboratory (CI-M)

Students who do not wish to take all three modules within a subject may register under 5.35U, 5.36U, 5.37U, or 5.38U (provided they meet the prerequisites for the desired module[s]). Each module carries four units of credit.

Originally the 12 unit labs consisted of 3 experiments that were distinct and easily modularized. Often students had trouble finishing the entire sequence of three labs because of conflicts with other classes and other commitments. On the other hand, there was the recognition that splitting a 12 unit lab module would allow for

greater flexibility and choice both for the student and the instructor. Chemistry therefore saw an opportunity to cleave the 12 unit subject into 3 sub-term subjects. Doing so has allowed the following:

1. Greater flexibility for the student who may elect to complete any number of the three modules during a term and leave the remaining to another term(s),
2. Greater flexibility on the content of each module because any update to an individual module does not require a wholesale overhaul of the entire 12 unit subject,
3. Greater precision in the specification of the appropriate prerequisites pertaining to each lab module versus a general listing of prerequisites for the 12 unit subject, therefore allowing the student to obtain the relevant prerequisite as needed for each module.

These modular sub-term subjects have proven a success across all three opportunities listed above. It is important to note that these modular sub-term subjects do not require final exams and are essentially composed of exercises spread evenly across the term of the class. Therefore, as opposed to many of the sub-term subjects discussed in this report, these modules operate as separate though integrated elements of a 12 unit full term sequence. However, the student often elects to take one or two of the modules (one or two thirds) of this sequence during one term, leaving the remainder for another term. A further discussion of this particular sequence returns in Section 4 Discussion and recommendations.

COMBINATIONS THAT FULFILL GENERAL INSTITUTE REQUIREMENTS

Samplings Subjects (HASS-H)

Students receive Humanities Arts and Social Sciences (HASS) credit for successfully completing any two of the following six-unit subjects:

21L.310 Bestsellers
21L.315 Prizewinners
21L.320 Big Books
21L.325 Small Wonders
21L.338 Reading in the Original
21L.339 Literary Translation
21L.345 On the Screen
21L.350 Science and Literature
21L.355 Literature in the Digital Age

REST Subjects

Approved for 2014-15 are two specific combinations of subjects, which the Committee on Curricula (CoC) approved as reconfigurations of existing 12-unit Restricted Elective in Science and Technology (REST) subjects. These new six-unit subjects are also half-term subjects; the first subject in each pair is a prerequisite for the second.

Replacing 6.00 Introduction to Computer Science and Programming
6.0001 Introduction to Computer Science Programming in Python
6.0002 Introduction to Computational Thinking and Data Science

Replacing 1.018J Ecology I: The Earth System
1.018AJ Fundamentals of Ecology I
1.018BJ Fundamentals of Ecology II

CI-M Subjects (Examples)

The following sequence of six-unit, full-term subjects counts as a Communication Intensive in the Major (CI-M) for students in Course 6.

6.UAT Preparation for Undergraduate Advanced Project
6.UAP Undergraduate Advanced Project

The following sequence of subjects counts as a CI-M for students in Course 12.

12.115 Field Geology II (12 units; Institute Lab)
12.116 Analysis of Geologic Data (6 units)

SUB-TERM SUBJECTS IN DEGREE PROGRAMS (Examples)
Course 1

1.060A Fluid Mechanics (6 units; first half of term)
1.060B Fluid Mechanics II (6 units; second half of term)
Note: The above sequence replaces 1.060 Engineering Mechanics II.

1.061A Transport Processes in the Environment I
1.061B Transport Processes in the Environment II
Note: The above sequence replaces 1.061 Transport Processes in the Environment.

1.070AJ Introduction to Hydrology and Water Resources (6 units; first half of term)
1.070BJ Introduction to Hydrology Modeling (6 units; second half of term)
Note: The above sequence replaces 1.070 Introduction to Hydrology.

The 1-ENG degree chart includes modular options within its required subjects. For example, students choose between the following half-term, six-unit subjects. The subjects have the same prerequisites.

1.073 Introduction to Environmental Data Analysis
or
1.074 Multivariate Data Analysis

Course 2

2.03 Dynamics I (6 units; first half of term)
2.031 Dynamics II (6 units; second half of term)

Note: The above subjects meet with 2.003J Dynamics and Control I, a full-term 12-unit REST subject.

2.05 Thermodynamics (6 units; first half of term)
2.051 Introduction to Heat Transfer (6 units; second half of term)

The 2-A degree chart includes modular options within a required tier of subjects. For example, students choose between the following half-term, six-unit subjects. The subjects in each pair have the same prerequisites.

2.02A Mechanics of Materials: Properties and Applications
or
2.02B Mechanics of Structures
2.04A Systems and Controls
or
2.04B Introduction to Mechanical Vibration

Graduate sub-term subjects

Each of MIT's five schools has offered graduate level sub-term subjects since 2008 and several for much longer. The Sloan School of Management has long been offering subjects that span half of the term and the school has institutionalized this pattern with a half-term intersession period, the Sloan Innovation Period (SIP). This week-long period is meant as a curriculum-free intersession, though some subjects for Master of Business Administration students are required. Sloan has also long dominated the overall number of sub-term subjects offered. In 2008 that school offered more than three times the number of classes of any other school and despite the rise of sub-term subjects across several school at MIT, most notably the School of Engineering (SoE), in 2015, Sloan still offers 21 more graduate sub-term subjects than the SoE (Sloan, 51: SoE, 30).

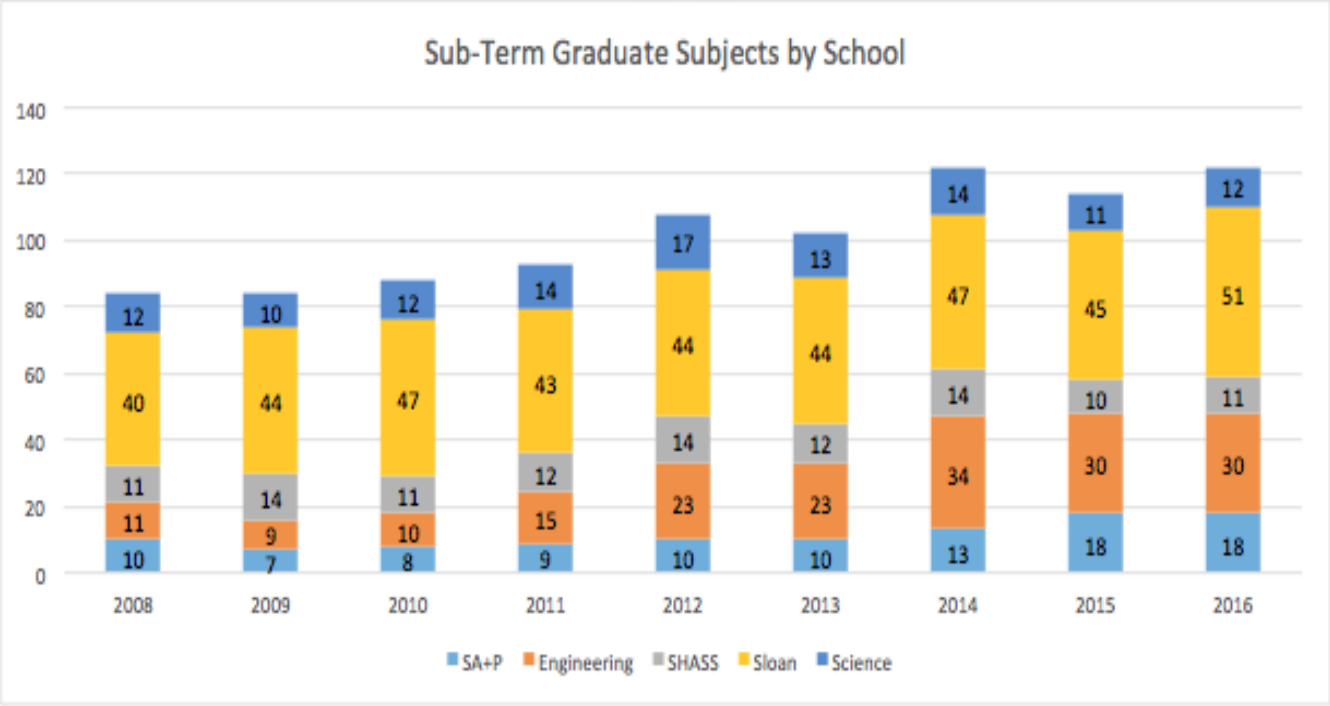


Figure 6. Total annual graduate sub-term subjects offered in each school, 2008-2016.

The greatest absolute and percent increase in the number of sub-term subjects has been in the SoE; an increase of 19 subjects for 272 percent growth between 2008 and 2016. The SoE now offers a substantial number of graduate sub-term subjects; 30 in 2016, up from 11 in 2008.

In terms of units, the table below lists the graduate credit units for full term, sub-term and total credits in the fall and spring terms AY15.

Table 4. AY15 total graduate units (full term + sub-term), percentage of units offered through sub-term subjects, and full term and sub-term student-credits (number of units x number of students enrolled).

AY 15 Total Graduate Units						
SA+P	Engineering	SHASS	Sloan	Other	Science	Total
1222	3065	1469	1420	12	1928	9116

AY 15 Percentage of Graduate Credit Hours Offered Through Sub-Term Subjects						
SA+P	Engineering	SHASS	Sloan	Other	Science	Total
6%	3%	6%	26%	0%	3%	8%

AY 15 Graduate Student-Credit Totals							
	SA+P	Engineering	SHASS	Sloan	Other	Science	Total
Full Term	20061	60736	13373	81880	12	27653	203715
Sub-term	2318	2130	164	22914	0	1263	30269

In AY15, the percentage of graduate credit hours offered through sub-term subjects is 8% of all credit hours, while the percentage of student-credits (student-credits = # of students x # of credits) attributable to sub-term subjects is 15% of the total.

Current rules governing sub-term subjects at MIT

Even before the work of the subcommittee began, the topics of add and drop dates associated with sub-term subjects had generated significant conversation and some consternation. As we proceeded through collecting data, especially from surveys (see Section 3) this aspect of sub-term subjects emerged as a significant concern for students and professors alike. Below is a synopsis of the current rules governing add and drop dates for regular and sub-term subjects.

Add and drop dates for sub-term subjects are determined by the scheduling of the subject during the term along with its start date. Add and drop dates for sub-term subjects are determined by whether the subject is scheduled entirely within the first half (H1, Fall; H3, Spring), or second half (H2, Fall; H4, Spring) of the term or begins after add date.

For sub-term subjects given in the first half of the term, add date and drop date both fall on the same day, the regular add date.

For sub-term subjects given in the second half of the term, add date corresponds to the regular drop date, and drop date for that sub-term subject is the last day of regular classes that term.

Table 5: MIT Registrar add and drop deadlines (http://web.mit.edu/registrar/reg/add-drop.html) See Section 4, Figures 7 and 8 for calendar diagrams of these rules.

Type of Subject	Add Deadline
Full-term subject	Add Date
Subject scheduled entirely in the first half of the term	Add Date
Subject scheduled entirely in the second half of the term	Drop Date
Subject which begins after Add Date e.g. UROP for credit, thesis, special subjects	Drop Date

Type of Subject	Drop Deadline
Full-term subject	Drop Date
Subject scheduled entirely in the first half of the term	Add Date
Subject scheduled entirely in the second half of the term	Last Day of Classes, Thursday, May 12
Subject which begins after Add Date e.g. UROP for credit, thesis, special subjects	Drop Date

These rules are clear but the evidence of a steady stream of CAP petitions related to sub-term subject add and drop dates and survey results from this study suggest they are not completely understood by students partly because they overlap with the rules governing full term subjects. Also, undergraduates especially are generally focused on the rhythm and pacing of the semester as established by full terms subjects and the rules for sub-term subjects, while certainly clear, are not always remembered and acted on in a timely manner by undergraduates. Sections 3 and 4 discuss this question in detail and offer recommendations. Also see the Appendix for a recent accounting of CAP petitions.

3. Assessing value and impact

In assessing the value and impact, both positive and negative, of the emergence of sub-term subjects the subcommittee agreed that various modes of inquiry were required for any hope of a complete picture. Both qualitative and quantitative information were collected. Previous efforts have examined various aspects of sub-term subject offerings. Several reports and studies are listed at the beginning of this report. The TLL report of 2012 is notable in having reviewed some of the similar issues addressed here.

This study of sub-term subjects seeks to provide a general assessment of value and impact across the Institute. It is understood that this general assessment, though substantially fed and influenced by departmental examples, cannot attempt a detailed assessment of the value and impact at the department level. Additional study will be

required to derive robust conclusions on the value of sub-term subjects in individual departments. It is a fundamental attribute of this study that greater nuance and detail of impact and value can best be determined by professors in individual departments who are better positioned and more knowledgeable than this subcommittee.

However, it is important to look across the Institute and to do so several methods of inquiry were used. First, two surveys were developed, one for students and another for faculty. In addition, two focus groups were convened, one of undergraduate students and the other graduate students. Finally, several instructors of sub-term subjects were interviewed in person or by phone or provided guidance through email to the Chair of the subcommittee.

Broadly, the two surveys, the small graduate student focus group, and exchanges and interviews with faculty provide a shortlist of issues, and positions related to those issues, that point to positive attributes and negative consequences of sub-term subjects. Generally, these include the following:

Positive attributes:

- For some specific topics sub-term subjects may offer a better mode for delivery and more appropriate level of granularity of content in a focused, concentrated time period.
- Sub-term subjects may allow for greater flexibility and diversity of choice for both undergraduate and graduate students.
- For students a sub-term subject may lower the "cost" of an introductory exploration.
- For faculty a sub-term subjects may lower the "cost" of testing out new content and teaching modes.

Negative consequences

- The shorter duration of sub-term subjects may increase the pace and weekly content of the subject while reducing the opportunity to establish a positive and productive teaching and learning environment.
- There is potentially greater risk for the student in taking a sub-term subject if there is less time and fewer exams and problem sets leading to a final grade. Similarly, the time for recovery for a student who is not performing at the level to which they aspire is shortened.
- The faculty may have less time to get to know students in their classes.
- There is a far from perfect understanding and communication of the rules regarding add and drop date deadlines for sub-term subjects.
- Administrative and cost issues often arise from more "interfaces" between subjects. That is, within one term, there are more starts and ends to subjects in a curriculum that contains sub-term subjects. With each start and end, there are administrative costs (final grades, etc.) and teaching load costs (new faculty for each class, new TAs, etc.).
- Students may be tempted to drop and/or add subjects as they switch between sub-term subjects and a closely related full term subject with the objective of maximizing a grade outcome. This is not only a potential problem in that the student may be making short-term curricular decisions solely based on a grade objective but also because departments and individual instructors may face dramatic enrollment changes midway through the term and around add and drop dates. These enrollment changes complicate the planning of teaching and teaching assistant resources.

The surveys

Two surveys, one for students and another for faculty/instructors were constructed and distributed to a randomized set of the MIT community. Undergraduate and graduate students and faculty were invited and responded; invitation and response numbers are shown in the table below.

Table 6: Survey invitations and response rates for student and faculty survey.

TYPE	invited	responding to at least 1 question	% response
Undergraduate	1864	377	20%
Graduate	2949	435	15%
Faculty	199	56	28%
Faculty/instructor by School	invited	responding	% response
School of Architecture and Planning	12	3	25%
School of Engineering	59	24	41%
School of Humanities Arts and Social Sciences	29	7	24%
School of Science	74	15	20%
Sloan School of Management	23	6	26%
Dean of Undergraduate Education	2	1	50%
Faculty/instructor by Rank	invited	responding	% response
Tenure-track	29	10	34%
Tenured	103	34	33%
Instructors	67	12	18%

Undergraduate Assessment – Survey and Focus Group

The student survey was opened on January 21, 2015. Jagruti Patel of the Chancellor's office made it available to the community via a general email to a randomized set of students. The results provided an important original data set from current members of the student body. The survey was open to both undergraduate and graduate students.

The survey included about 25 questions in total; 21 questions were relevant to undergraduates and 4 questions to graduate students. Also, within the set of 25 questions, 4 (questions 20-23) were addressed to students who had served as TAs for a sub-term subject. The synopsis below highlights several key findings citing the numerical results and indicating the question in the following way; question 2 is shown as (Q.2).

The survey results show that 36% of the respondents had taken at least one sub-term subject at MIT, and of those, 63% had taken two or more in the last two years (Q.2). Most respondents took sub-term subjects during the fall term (Q.s 4, 15) though it is prudent to remember that the survey was given during IAP 2016 and therefore does not include the incidence of enrollment that will occur in these types of subjects in the spring term 2016. In reference to the most recent sub-term class taken, slightly more enrolled in a class during the second half of the term versus the first half (54%>40%, Q.4). However, when responding with respect to all sub-term classes taken while at MIT significantly more students enrolled during the first half than the second (Fall: 73%>47%, Spring: 41%>35%: Q.15).

There were many similar text responses to the query, "Please describe your reasons for taking this sub-term subject." A majority of the response types were independent of the sub-term length of the class; the class was a requirement, or the topic was "interesting" or it was simply a topic the student wanted to learn about. However, there were a small number of responses that offered some element of choice of the subject specifically related to the sub-term status:

- "I didn't want to spend a full term on something I thought I could learn in just a few classes. " and;
- I had initially planned to take all three modules in the same term, but for health reasons it ended up being good to be able to complete two modules in one term and leave the third for another one." and;
- "It left plenty of time for research."

Students overwhelmingly indicated that the number of units assigned to sub-term subjects was "about right" (85% for a specific SBTS, Q.8 and 80% for other SBTS classes, Q.16) contrasting to some extent with anecdotal and an oft-repeated critique of this type of subject as containing more material than the credit units assigned. However, it is a bit troubling to have a nontrivial 12-15% of respondents indicate that the units were less than they should have been. Similarly a respectable majority considered the workload to be comparable to that of a full-term subject (60% for a specific SBTS, Q.9, 63% for other SBTS, Q.16) allowing for a reasonable conclusion there may not be some evidence of a significantly compressed amount of content in sub-term classes overall. Again, this result stands in some contrast to the anecdotal notion that sub-term classes tend toward a greater density of content than full term subjects.

On the topic of stress, results indicate that sub-term subjects are not generally considered to be a major source of stress (Q.10). About half (50-52%) of all respondents rated the stress of their workload to be the same in full-term subjects and sub-term subjects. Slightly more than 1/3 (33%-38%) of respondents indicated that sub-term subjects were less stressful than full-term subjects; about 14% said SBTS were more stressful than full-term subjects.

However, a full 68% of the respondents answered that sub-term subjects were either "slightly stressful" or "moderately stressful". Only 7% rated these classes as very stressful. Full term subjects as "slightly stressful" or "moderately stressful" were rated very similarly, amounting to 72%, while respondents rated full term subjects as very stressful at double the rate (14% versus 7%) of sub-term subjects (Q. 10 and similar results for closely related Q.18). These results do not seem to clearly indicate that sub-term subjects are either more or less stressful than full term subjects. In fact, one could argue that these results are modest evidence that students consider sub-term subjects to be very slightly less stressful.

However, students, in their text responses, identified three sources of stress;

1) stress resulting from a reduced opportunity to raise a grade after a bad exam or other evaluation;
2) stress from the belief that catching up after missing one lecture was more difficult than in a full term subject, and;
3) stress related to a faster pace and complications or confusion regarding the subject's scheduling.

Text responses regarding the reduced opportunity to improve one's grade during the term included; "…there is a small safety cushion if one does bad on assignments or a test.": and,

- "Exams…more important than for whole-term… and thus more stressful.";
- "A bad start to a class has less chance for recovery.";
- "More high stakes exams."
- Similarly, "If you miss one lecture or more it is hard to catch up before the final exam.";
- "If… a class is to be missed, it is a considerable amount of material lost."

Finally, the survey took a hypothetical turn in Q.24 as it asked students to choose enrolling in a full term subject versus a comparable set of sub-term subjects, assuming the overall content was the same. 42% of respondents indicated they would definitely or probably enroll in a full term subject versus 27% definitely or probably enrolling in a sub-term subject; 31% were undecided or said it would depend on the circumstance. This result should, however, be interpreted carefully as it is fundamentally a prediction of behavior in the abstract and not the result of an actual experience (unlike much, though not all, of the rest of the survey).

Table 7: Full term versus sub-term preferences for undergraduate and graduate students.

		UG		G		Total	
		Count	Col %	Count	Col %	Count	Col %
24. Hypothetically, if the same educational material was available as a full-term subject and a set of sub-term subjects, in which would you enroll?	I would definitely enroll in the full-term subject	48	14.1%	46	12.1%	94	13.1%
	I would probably enroll in the full-term subject	117	34.4%	93	24.5%	210	29.2%
	I would probably enroll in the set of sub-term subjects	62	18.2%	91	24.0%	153	21.3%
	I would definitely enroll in the set of sub-term subjects	19	5.6%	23	6.1%	42	5.8%
	Undecided or It would depend on the circumstance	94	27.6%	126	33.2%	220	30.6%
	Total	340	100.0%	379	100.0%	719	100.0%

Note some difference by student level – 45% of graduate respondents would probably or definitely enroll in SBTS, higher than UG at 33%.

Table 8: Survey results on plans to take sub-term subjects.

	Q1-taken SBTS?				
hypothetical	Done	Plan to take	Un-decided	Do not plan to take	Total
full term	40%	30%	41%	57%	42%
I would definitely enroll in the full-term subject	14%	9%	7%	23%	13%
I would probably enroll in the full-term subject	26%	20%	34%	34%	29%
subterm	31%	36%	28%	12%	27%
I would definitely enroll in the set of sub-term subjects	9%	8%	4%	1%	6%
I would probably enroll in the set of sub-term subjects	22%	28%	23%	11%	21%
Undecided or It would depend on the circumstance	29%	34%	31%	31%	31%
Total	100%	100%	100%	100%	100%

Table 9: Survey results on plans to take sub-term subjects.

		Have you completed a sub-term subject at MIT?				
		Plan to take	Undecided	Done	Do not plan to take	Total
I would definitely enroll in the full-term subject	N	13	12	32	37	94
	Col %	9.4%	6.6%	13.6%	23.0%	13.1%
I would probably enroll in the full-term subject	N	29	63	62	55	209
	Col %	21.0%	34.4%	26.3%	34.2%	29.1%
I would probably enroll in the set of sub-term subjects	N	39	43	53	18	153
	Col %	28.3%	23.5%	22.5%	11.2%	21.3%
I would definitely enroll in the set of sub-term subjects	N	11	8	22	1	42
	Col %	8.0%	4.4%	9.3%	0.6%	5.8%
Undecided or It would depend on the circumstance	N	46	57	67	50	220
	Col %	33.3%	31.1%	28.4%	31.1%	30.6%
Total		138	183	236	161	718

Crossing the hypothetical with the concrete Q1 (have you taken an SBTS), we see some questioning, with about 1/3 of all respondents indicating they were undecided on their preference.

Also, the range of motivations that lead to taking a sub-term subject (modularity, flexibility, focus on smaller amounts of material) versus a full term subject are not cited in the question as drivers that would compel a student to choose a set of sub-term subjects that precisely matches a full term offering. One could reasonably point out that the premise of the question disadvantages the selection of the sub-term option as a result.

Many text responses did however point out a range of negative consequences including less time for learning material, less depth in coverage of the material, and less time available for developing ideas in class. Text responses of this type were numerous;

- "Less depth.";
- "Less time for in depth understanding…";
- "Less time for material to sink in… ";
- "Less time to digest everything.";
- "Lesser time to spend delving deeper into certain aspects/concepts.";
- "May not be enough time to really learn something.";
- "More superficial understanding.";
- "Not going as in depth as full term.", and more.

In contrast, text responses clearly highlighted the positive aspects of sub-term subjects. Responses highlighted the benefits of a focused, condensed subject:

- "Accelerated schedule. Easy to stay engaged for 6 weeks.";
- "Can focus learning.";
- "Allows you to explore more subjects!";
- "Can fit more classes in.";
- "Good way to get quick crash course into subject.";

In addition, numerous responses highlighted other positive aspects of sub-term subjects;

- Flexibility in subject matter, intensity and scheduling (~90 comments)
- Learn material / introduction to material faster (~15 comments)
- Ability to explore variety of subject matter (~38 comments)
- Allows students to focus on a topic (~29 comments)

As mentioned above several questions were reserved for students who had served as TAs of sub-term subjects (Q.s 20-23). In Q.21, two results stand out as notable.

First, 17% of respondents disagreed with the statement, "I had enough time to properly evaluate the students enrolled in sub-term subjects" (Q.21). While the survey does not provide a control set of results for full term subjects on this point, it is enough to have these results to be concerned that a sizable group does not have the time to fulfill a fundamental aspect of their TA duties. However, about two-thirds of respondents agreed or strongly agreed with that statement.

I had enough time to properly evaluate the students enrolled in sub-term subjects (e.g., grade problem sets and tests)	16.7%	Strongly Agree
	50.0%	Agree
	16.7%	Neither agree nor disagree
	16.7%	Disagree
	0.0%	Strongly disagree
	18	Total Responses

Second, similarly troubling, 17% of TAs responding disagreed with the statement "Students enrolled in the sub-term subject understood the rules governing the class (e.g., drop and add dates, grading policies)". Certainly not a trivial number though a full 82% did understand. Positive aspects of being a TA of a sub-term subject included were the reduced workload, the ability to better concentrate on a topic and ability to then spend the remainder of the semester on research. Negative aspects included that it was not enough time to develop in depth knowledge, and a reduced opportunity to get to know students.

Graduate Student Focus Group

Zoya Bylinskii, graduate student member of the subcommittee, conducted a structured conversation with a small group of graduate students (5th year graduate student in chemistry; 4th year graduate student in MechE; 1st year graduate student in MechE; 3rd year graduate student in microbiology/BE; 2 Sloan business school students; 4th year graduate student in EECS) + 1 facilitator (4th year graduate student in EECS and others).

Generally, it was felt that sub-term subjects are particularly useful as electives and for special topics (e.g. seminar classes, special industry classes in Sloan). These subjects accommodate well relatively flexible graduate schedules, and increase the flexibility with which graduate students can take classes. However, these students noted that sub-term subjects might result in lean teaching resources, especially when a sub-term subject is offered for the first time. For courses that had graduate student TAs, increased TA workload (resulting from an increased number of evaluations) was sometimes cited as a problem.

Specifically, it was noted that sub-term subjects offer flexibility to "round out" a student's schedule with a smaller number of credits than full term subjects. This flexibility means a student can apply a finer granularity to their curricular planning than otherwise. In Mechanical Engineering, for example, the many 9-unit subjects create a situation within the 144 credit requirement to complete the major that is more easily reached with the option of 6 unit offerings. A similar situation occurs in Sloan, where there is a maximum credits cap, preventing students from taking an additional full-semester course that might put them over the cap (Sloan students preferred to have additional courses, specifically 6-unit courses, they could take to reach but not surpass the cap). In addition, graduate students may balance their term to include more units in one or the other half of a term allowing greater opportunity to concentrate on research work and travel to conferences.

This flexibility also extends to electives in which students may decide to take part 1 of a topic and then decide whether or not they are interested in investing in part 2. This flexibility is the same for undergraduates who can take advantage of a low investment threshold to explore subjects they would not otherwise have faced with only full term subject offerings. In addition, sub-term offerings can provide greater diversity in topics leading to the satisfaction of a demand for highly specialized subjects. For example, a 6 week course on 'electrochemical experimental methods' consists of the class reading the one existing textbook on this topic, discussing it, and

concluding the course with an exam. In this case, it was noted that a single exam at the end of this class was appropriate.

While similar difficulties were noted in the rules governing sub-term subjects such as add and drop dates especially for subjects that do not start at the very beginning of the term and do not end at the halfway point, these issues were not considered fatal flaws. Somewhat more troubling was the observation that sub-term subjects could lead to leaner teaching resources including a lack of professors. Explanations for this observation included the spreading of resources across both full term and sub-term offerings. The subcommittee encountered several instances that had led to the perception and perhaps the reality that resources were not adequately provided to sub-term subjects. Additional problems cited were messier schedules with more discontinuity, especially if sub-term subjects are required courses in the program.

Teaching Assessment Focus Group

From the perspective of teaching assistants sub-term subjects offer very particular opportunities and difficulties. Opportunities include the ability to engage in a short and valuable teaching experience. This allows a graduate student to gain teaching experience while avoiding the commitment of an entire term. However, the fractional nature of this teaching experience creates a more complex funding scenario. If a graduate student requires the support that comes with the position of a full time Teaching Assistant, that student is left with the task of finding another sub-term position to round out funding. This may not always be possible.

Faculty Survey

The faculty survey was opened on January 23, 2015. It was made available to the community via email invitation to a randomized set of the MIT faculty. The results provide an important original data set from those instructors. The survey was open to instructors teaching undergraduate and graduate level subjects. It is important to note inherent bias in the survey as it is likely that faculty who responded were probably mostly those who had taught a sub-term subject. The survey included 12 questions plus three additional text response opportunities.

The survey results show that 78% and 22% of the respondents had taught a sub-term subject at least once or more than once, respectively (Q.1). A little more than half expected to continue teaching the same number of sub-term subjects in the future (Q.2) and this group of respondents indicated slightly more (60%) were taught in the fall as in the spring (Q.5).

Only 26% indicated they had provided information to their students regarding add/drop rules governing these types of classes and 88% indicated they were following the registrar's add/drop guidelines (Q.s 6 and 7).

A little over two thirds of those responded that the duration of the class corresponded well to the amount of material covered. 27% indicated that there was more material in the content of the class than could be covered in the time allotted and 6% (3 respondents) indicated much more material than time allotted (Q.8). In terms of units assigned 96% responded they were just right (Q.9). Similarly, Q.12 directly addresses the workload of a "typical" sub-term subject and respondents again indicated that most are comparable to the amount of work in the same number of weeks of a full term subject. However, 25% (12 respondents) indicated that the workload was somewhat heavier.

Questions 11 and 12 offered the opportunity for reasons why their home department may increase or decrease the number of such offerings. Reasons to expand included the suggestion that 6 weeks was appropriate to cover certain subjects and in particular specialized graduate courses. In addition, these types of classes offered flexibility for students to add topics of interest to their schedules. Only one respondent stated a reason to decrease the offerings related to difficulties in the revision of the CEE curriculum resulting in dividing 1.018 into 1.018A and 1.018B. Many more comments and particular instances are contained in the text responses to questions 13, 14, and 15.

Instructors were asked for a text response on the negative aspects of sub-term subjects. Six weeks was cited as not allowing for depth:

- "Can't cover as many topics or go into as much depth as you might like to.";
- "You run out of time to cover material.";
- "For core departmental subjects it is not possible to go into any depth or review of "muddy" points in a 6-unit subject where a certain amount of material is expected to be covered…";
- "Need to cover quickly – breadth vs depth.";
- "Not much breathing room in class for students to reflect.";
- "Soak time is shorter than I'm used to.";
- "…it feels a bit like boot camp."

Also, a couple of comments highlighted the difficulty of getting to know students in the short time:

- "…smaller amount of time to get to know students.";
- "since professor-student interactions are "organic", it is a bit hard to develop good class dynamics fast enough in half of a semester.".

Finally, two comments also highlighted drop and scheduling issues in H2:

- "H2 courses can be dropped after full-term courses and students tend to drop them when the workload in full term courses gets too heavy. Need to adjust drop dates, at least for H2 courses.";
- "The second half is more difficult because end of term regulations, effectively limit quizzes and homework by one whole week. This shortens the effective length of a six week subject by one week. We need to change how the end of term regs apply to subterm subjects in the last of the term."

Instructors were also asked for a text response on the positive aspects of sub-term subjects. One kind of response highlighted the greater granularity and focus of content possible with shorter subjects:

- "One can tailor course content more precisely to student interests – one is "unbundling" content so students can more precisely choose what they want to learn.";
- "Extremely focused learning, intensive. I wish there were more of these classes, easier to form across disciplines. It would be great to be able to divide certain subjects among a group of faculty.";
- "Sharply focuses the students to the material.";

- "There's a heightened intensity. Students know it is going to end soon, so they pay attention to it now…"

Several comments noted the benefits to a curriculum:

- "it offers more flexibility as a building block of a curriculum.";
- "modularity, ease of scheduling, easier to implement change or updates.";
- "Can build a new course easily";
- "…given the reduced # of lectures it is more manageable to have a very tight plan for the whole class…";
- " …from a department's viewpoint it allows a greater number of subjects to be studied."

Additional thoughts included the following:

- "Good idea when appropriate."; " VERY valuable – I think that there is absolutely no reason why students should be forced to explore only 4 or 5 different subject areas per semester. Life at MIT is much too rich for that – and students deserve to be able to tailor their courses more precisely to their interests and needs.";
- " they have been important and valuable components of our [Chemistry Department] undergraduate and graduate educational programs.";
- "I think that they should remain a viable option. We have been doing them for over 20 years." ;
- "… great for upper level specialized subjects… But not departmental core subjects. Students just don't have enough time to Master the material."

The last comment above exemplifies the dual nature of the sub-term subjects. The Chemistry Department's Lab Modules, a core element of the major, are generally considered a solid success. While comments such as the one above caution against allowing for departmental core requirements to be fulfilled with sub-term subjects, it should be noted that some sub-term subjects seem more suited to a sub-term pacing than others. A notable example of success is the Chemistry lab module sequence already discussed above.

As mentioned in Section 2, one distinguishing factor is that the Chemistry Lab Module do not have final exams and the workload is spread rather evenly across the duration of the module. Departmental core subjects that are like the Chemistry modules may be better candidates for success than sub-term subjects that follow a traditional problem set and final exam sequence.

Performance and Petitions

As mentioned in the introductory section of this report, the original scope included a general interest to understand the performance of students in sub-term subjects versus full term subjects. While this is clearly of utmost importance the possibility for reaching robust and useful conclusions using grades quickly disappeared in the absence of data or the possibility for running controlled experiments and was replaced by the intent to gather as much available information and evidence of performance as possible. The subcommittee therefore offers the following data for the reader's benefit but is hesitant to reach hard conclusions on the relative performance of students in full term subjects versus sub-term subjects. Additional work is required to establish more than simple correlations between grades and sub-term versus full-term subjects.

Two sets of data illuminate the topic of performance, albeit in very limited ways. The first is a compilation of average grades across all undergraduate and graduate sub-term subjects between the spring term 2007 and spring term 2015.

The table below shows an average grade of 4.35 in full term undergraduate subjects in 2007, compared with 4.5 in sub-term subjects; for graduate students 4.71 full term and 4.7 sub-term.

For undergraduates the average grade in full term subjects has increased from 4.35 to 4.51 in Spring 2015, while average grades for sub-term subjects decreased from 4.5 to 4.32. During this period the range for full term subjects included a low of 4.32 in Fall 2010, but the trend has been upward. The range for sub-term subjects included a low of 4.24 in the Fall of 2012 and a high of 4.61 in Spring 2011. While the overall trend was a decreasing average grade, average sub-term subject grades varied more than full term subject grades.

For graduate students the average grade in full term subjects has stayed about the same from 4.51 in Spring 2007 and 4.72 in Spring 2015, and similarly the same for sub-term subjects, 4.7 in Spring 2007 and 4.69 in Spring 2015. The range for sub-term subjects included a low of 4.24 in the Fall of 2012 and a high of 4.61 in Spring 2011. While the overall trend was a decreasing average grade, average sub-term subject grades varied more than full term subject grades.

Table 10: Average grades for full term and sub-term subjects for undergraduate and graduate students.

	undergraduate		graduate	
	Full term	Sub-term	Full term	Sub-term
2007SP	4.35	4.5	4.71	4.7
2008FA	4.34	4.51	4.65	4.65
2008SP	4.36	4.37	4.71	4.66
2009FA	4.32	4.4	4.62	4.58
2009SP	4.37	4.26	4.7	4.59
2010FA	4.32	4.44	4.65	4.57
2010SP	4.38	4.45	4.7	4.58
2011FA	4.35	4.35	4.65	4.61
2011SP	4.39	4.61	4.68	4.61
2012FA	4.4	4.24	4.65	4.59
2012SP	4.43	4.46	4.7	4.59
2013FA	4.43	4.37	4.67	4.56
2013SP	4.45	4.47	4.7	4.6
2014FA	4.45	4.36	4.68	4.57
2014SP	4.46	4.41	4.72	4.65
2015FA	4.49	4.3	4.66	4.54
2015SP	4.51	4.32	4.72	4.69

Another facet of performance is the set of petitions from undergraduate students received by the Committee on Academic Performance (CAP) associated with sub-term versus full-term subjects. These petitions are only those submitted by undergraduates seeking correction of some kind. The data provided by the CAP indicates that most of these petitions are associated less with academic performance than with issues related to the rules

governing add and drops, with the majority associated with late drops. We note that there are three separate deadlines governing drop dates (regular term add date and drop date, as well as the last day of classes), and two separate deadlines governing drop dates (regular term add date and drop date). We believe this might contribute to confusion evidenced by the large number of late drop petitions.

Although CAP receives other petitions related to sub-term subjects (such as change from grades to PDF), late drops are where the bulk of the effort lies. In many cases, these are complicated by the fact that sub-term subjects may be related to full-term subjects. CAP receives complicated linked petitions, with simultaneous adds and drops, from students trying to straighten out a tangle of related subjects. Confusion over deadlines for sub-term subjects and their overlap with full-term subjects can make this particularly complicated. The explanations given by students on their petitions are often time-consuming to understand and evaluate.

By fraction of the total, the largest number of petitions originate from Course 2. Students from that department submitted 18 sub-term term subject petitions out of 179 petitions in total (10%) over the ten-year time period 2005-2015. The next largest by fraction is represented by course 1, which had 3 partial term petitions out of 43 (7%). The largest absolute number originated from course 21 which had 20 partial term petitions out of 582 (3.4%) petitions in total.

It was determined that a more focused analysis of the period between Fall 2012 and Fall 2015 would be useful especially in terms of the proportion of petitions arising from sub-term subjects versus full term subjects. Because of the prevalence of petitions from courses 1 and 2 during this period (with a much smaller number of sub-term subject petitions from other courses), we focused on these two departments. Although the absolute number of petitions is relatively modest, the numbers clearly show a rise in petitions. Because of the complicated nature of many sub-term subject petitions, this rise yields a disproportionate processing effort, as compared to typical petitions from full-term subjects.

4. Best practices, recommendations, and a proposal

As a conclusion to the work of the subcommittee the members arrived at a consensus that concrete recommendations were due. After reviewing the varied and detailed expressions of support for these kinds of subjects, as well as concern about the lack of regularization and the resulting negative consequences specified in the previous section, the committee felt that an appropriate response required a clear set of actions.

However, it was also deemed important to highlight a range of best practices that had been uncovered during the subcommittee's work. This is important on two counts. First, the value of listing best practices for the benefit of the various elements of the MIT community is obvious. Knowing how best to develop, deliver, maintain, and improve any kind of curricular offering is an important element of delivering on the core educational mission of the Institute. Second, it became clear early in the work that significant aspects of supporting and enhancing sub-term subjects at MIT could not be done through regulation and would heavily rely on articulating and communicating successful techniques and strategies particularly relevant to the particularities of subjects less than a term in duration.

Also, because of the prevalence of half-term subjects as the major form of sub-term subjects at MIT (see Section 2), it was decided that concrete recommendations would pertain to that one type of sub-term subject and no

others, though further examination is needed of sub-term subjects that do not fit the standard half-term form. These include subjects that are slightly shorter or longer than a strictly defined half-term of 7.5 weeks, examples of which can be found in the curricula of the Sloan School and the Harvard-MIT Health Sciences and Technology Program, and others. The subcommittee decided that it was not practical to formulate pedagogically positive and supportive schemes for regularization of sub-term subjects of smaller increments (less than 6 weeks) or longer increments (more than 8 weeks).

Also, sub-term subjects with finals and those without should be considered separately. As discussed above in relation to the modular Chemistry Lab Modules (5.35, 5.36, 5.37, 5.38), sub-term subjects without final exams do not have nearly the potential for creating conflicts with other full term class assignments and exams. In addition the modular Chemistry Lab sequence has a demonstrable record of success both from the perspective of the student and the faculty. Therefore, the subcommittee decided not to suggest any recommendations or rules that would directly affect sub-term offerings without final exams. However several best practice guidelines below are certainly relevant to these kinds of subjects.

While the work of the subcommittee did not focus on GIRs as sub-term subjects, great caution should be taken in offering GIRs as anything but full term subjects. The possibility of additional stress, confusion regarding the pacing, shortened window for recovery after a obtaining a low grade, and other factors, are reasons for caution in the use of sub-term subjects to fulfill General Institute Requirements.

Best Practices

A set of best practices and specific recommendations are important in improving the likelihood of a successful sub-term subject offering. The subcommittee discussed a range of best practices and decided to offer a listing for the benefit of the MIT community.

The subcommittee strongly encourages better communication to students regarding Add and Drop dates. Many of the issues that arose in our investigation highlighted the simple need for clear and consistent communication to students regarding the expectations and rules governing sub-term subjects. In terms of Add and Drop deadlines, better communication is critical. Earlier in the report we noted that only 26% of the faculty surveyed indicated they had provided information to their students regarding add/drop rules governing their sub-term subjects. Repeated reminders of Add and Drop deadlines, especially as those deadlines approach during the term should be the regular practice of instructors and Teaching Assistants. Improving communication will alleviate stress, reduce CAP petitions, decrease confusion, and improve the successful emergence of new sub-term subjects at MIT.

During the collection of data, conversations with students, staff, and the faculty; review of previous reports and recommendations, the following best practices surfaced as important elements of success in teaching and learning in a sub-term subject. Hopefully, departments and instructors will benefit from this listing in the development of new and the maintenance and improvement of existing sub-term subjects.

- Clear and early communication of the expectations of students taking the sub-term subjects results in a reduced number of issues.
- Clear and early communication regarding the dates and timing of all assignments and exams is critical.
- Clear and early communication on the rules governing the sub-term subject, including add and drop dates, results in a reduced number of petitions and will reduce the likelihood of undue stress.

- Department academic administrators should send out regular communication to students and faculty regarding the rules governing sub-term subjects.
- Flexibility in the assignment of grades allows for recovery from a bad early start in the subject will lessen students' concerns about this issue.
- Heightened care is taken by the instructor to ensure that the content is commensurate with the number of weeks that the class is offered.
- Adequate department support for the sub-term subject is ensured so that the perception and/or reality of a lack of resources can be avoided.
- TA responsibilities are clearly outlined at the outset of the class and consideration of the ways in which funding is allotted to TAs of sub-term subjects should be given special consideration.

Recommendations

The following are a set of recommendations offered in the maintenance of existing and the development of new sub-term subjects. These recommendations reflect some of the best practices listed above while others go beyond. The subcommittee is not taking a position on whether and how these recommendations are to be implemented in rules and policies of individual departments, the Registrar's office, etc. Additional consideration will certainly be required by appropriate committees of the Institute and individual departments in evaluating the appropriateness of taking the next steps toward implementation. The subcommittee encourages the Faculty Policy Committee to set in motion the steps necessary for consideration and possible implementation.

1. Evaluation and Grading
    - By the end of the first week of class or after not more than 2 class meetings, students should be given a clear understanding of the grading policy for the class. All elements of the final grade should be given to the student.
    - Also, by the end of the first week of class or after not more than 2 class meetings all dates of exams, problem sets, and other assignments should be given to students.
    - At least 30% of a student's grade should be recorded and communicated to the student by Drop Date.
    - Grading should be organized in ways that allow all students to restructure the grade allotment between exams, problem sets and other assignments, and the final exam of sub-term subjects, for example,
        - Students may be given the option of doing a number of problem sets to replace taking a final exam,
        - Students may be given the option of nullifying the grade from a problem set (or two) and rolling the points from that problem set(s) into the final exam.
    - Sub-term subject evaluations should be completed by students before the final week of class. In light of the proposal below, subject evaluations would be completed by students before the final exam period week for half-term subjects (see *Half-Term Subject Proposal* below).

2. Regulations
    - The institute should allow the use of a special curricular option (junior-senior P/D/F, sophomore exploratory, etc.) only once, whether for one sub-term subject or one-full term subject. For example, the subcommittee recommends that the sophomore exploratory option cannot be

used twice; the first time for one half-term subject and the second time for another half-term subject.

- Subjects which are intended to fulfill a specific Institute requirement (e.g. CI-H, CI-M, HASS-A, HASS-H, HASS-S, the Institute Lab Requirement, etc.) remain subject to the ordinary rules of faculty governance as stipulated in the Faculty Rules and Regulations. [So for example, SOCR remains the governing body charged with determining if two 6-unit SBTS would be eligible to fulfill the CI-M requirement for their majors. Likewise, any change to the specific subject configurations to fulfill the Science GIRS would need to be routed through the CUP, CoC, FPC and the floor of the Faculty.]

3. Ongoing development and assessment:
    - As departments and individual faculty consider sub-term subjects, the subcommittee strongly encourages the development of half-term subjects as the primary form of sub-term subjects. Departments should be allowed to experiment freely with sub-term subjects but the regulation of sub-term subjects shorter than half-term will require further consideration. If departments focus their efforts on the development of half-term subjects versus sub-term subjects of smaller or larger increments of the term, an effort to arrive at an institute-wide set of rules for delivering these subjects for maximum learning and teaching value with minimum confusion and difficulty may be achieved.
    - The committee strongly discourages the development of sub-term subjects with final exams that are shorter than half the term. Final exams are stress points during the semester and a proliferation of final exams outside of the midterm week and the end of the term will create more high stress conflicts with other class requirements and commitments.
    - Sub-term subjects without final exams of shorter duration than half the term are an important element of the MIT curriculum and the subcommittee does not discourage their development. However, as these subjects grow in number throughout department curricula, further investigation of their effect on teaching and learning may be necessary.
    - The Teaching and Learning Lab, as well as other entities focused on education research and implementation of novel methods of teaching and learning should be enlisted in the evaluation of half-term subjects on an ongoing basis. For example, there may be some value in investigating sub-term subjects as part of the scope of the emerging MIT Integrated Learning Initiative (MITili).

Half-term Subjects Proposal

A half-term subject is one that begins on the first day of classes of the regular Fall or Spring term or around the 7th week of the term and lasts approximately 7 weeks. These subjects are generally designated as H1 and H3, if they commence at the beginning of the Fall or Spring term respectively, or H2 and H4, if they commence around the middle of the term, week 8 in the Fall or week 9 immediately after Spring Vacation.

This proposed scenarios described below focus on providing the best possible teaching and learning environment leading to the best outcomes for students, instructors, and teaching assistants. The main elements of this proposal are:

1. establishing more appropriate add and drop dates for half-term subjects;
2. regularizing start and end dates of half term subjects and;

3. providing the benefits of a final exam period (FEP) for all half-term subjects.

Figure 7 below shows the current calendar and the associated Add and Drop dates for both full term and half term subjects under current rules.

The motivation behind offering a proposal for change is to provide a template for discussion and refinement. While the subcommittee was not specifically charged to make a concrete proposal for change, the members felt strongly that we could offer at least two scenarios for consideration and further study. These two scenarios, outlined below, are meant to prompt productive discussion between professors, students, and the administration on the most appropriate steps to take in supporting half term subjects at MIT.

The subcommittee hopes that other possible scenarios for improving on the current situation may arise from the discussion elicited from a consideration of the recommendations that follow.

Primary Scenario (Figure 8)
To achieve our goals the first scenario calls for three recommendations:

1. **Half-term Add and Drop**: new Add and Drop dates for H1, H2, H3 and H4.
    c. Add and Drop dates for half term subjects are scheduled at points during the half term proportional to their scheduling during the regular term for full term subjects.
        i. Regular term Add date occurs at about the 33% point in the full term. Therefore the half term Add date is scheduled in the middle of the third week of each half term.
        ii. Regular term Drop date occurs at about the 70% point in the full term. Therefore the half term Drop date is scheduled at the end of the fifth week of each half term.
    d. All deadlines normally associated with Add and Drop dates will follow as specified by the Registrar's office for the proposed Add and Drop dates; that is, to or from P/D/F grading under Junior-Senior P/D/F or graduate P/D/F/ options falls on the proposed Add date; from Listener to Credit also on the proposed Add date, and from Credit to Listener on the proposed Drop date.

2. **Half-term start and end dates**:
    a. Half-term subjects will be six-seven weeks in duration with set start and end dates. See below for day counts in spring and fall terms.
    b. Start dates for H1 and H3 will be the first day of regular classes in the Fall and Spring terms respectively. Start dates for H2 and H4 will be the first day of the 8th week of classes and the first day after Spring Vacation, respectively.

3. **Half-Term Final Exam Period**:
    a. A designated half-term final exam week will fall on the last week of classes for half-term subjects. This pertains to both first half of term classes (H1 and H3) and second half-term classes (H2 and H4).
    b. Half-term classes will give their final exams, or have their final projects due, during regular class time in the last week of the half-term. This week will be designated the Final Exam Period for half term subjects (HT FEP in Figure 8).
    c. Half-term classes will be restricted from having any other assignment due or exam given during that same week.

d. In the case when an instructor needs more time than a regular class period to give the final exam, the instructor is responsible for scheduling a conflict exam acceptable to all enrolled students during half-term exam week.
e. Department academic administrators will regularly remind students and the faculty of the half-term final exam period rules. This communication should also include a request to all instructors of *full term* subjects to voluntarily refrain, if possible, from giving exams or major assignments due during the designated half-term final exam period week.
f. Half-term subject evaluations should be completed by students the week before the final exam period described below.

Secondary Scenario (Figure 9)

This secondary scenario is the same as the first with the exception of the scheduling of Add and Drop dates. In response to a series of interrelated survey and interview comments regarding the shortness of the half term, the perceived (and real) faster pace of this shortened term, the reduced opportunity for recovery from missing a class or not doing well on an exam or an assignment, this second scenario proposes earlier Add and Drop dates. The main consequence of these earlier deadlines would be to strongly encourage instructors to complete a substantial amount of grading by the end of the third week of classes so that students are able to assess their options. Another consequence may be that enrollments in half term subjects to stabilize earlier in the term and avoid massive shifts very late in the half term.

1. **Half-term Add and Drop**: new Add and Drop dates for H1, H2, H3 and H4.
    e. Half-term Add dates will fall on the Friday of the second week in each half-term period.
    f. Half-term Drop dates for H1 and H3 will fall on the Monday of the fourth week. Drop dates for H2 and H4 will be the same as the regular term Drop dates in the Fall and Spring terms respectively.
    g. All deadlines normally associated with Add and Drop dates will follow as specified by the Registrar's office for the proposed Add and Drop dates; that is, to or from P/D/F grading under Junior-Senior P/D/F or graduate P/D/F/ options falls on the proposed Add date; from Listener to Credit also on the proposed Add date, and from Credit to Listener on the proposed Drop date.

Items 2 and 3 remain the same between the two scenarios.

At first glance, adding new Add and Drop dates may be considered a recipe for greater confusion. On this point, the subcommittee arrived at two responses. First, there is already a level of confusion that belies the simplicity of the current arrangement. Currently Add and Drop dates for H1 and H3 classes are all aligned with Add date for full term subjects. In spring full term Drop date also serves as Add date for H3 and Drop date is last day of classes. The rules themselves are not confusing and yet problems still arise. The root of continuing difficulties in understanding the current rules is likely the result of poor communication rather than the simple set of existing rules.

Second and more importantly, the current arrangement of Add and Drop dates is not serving students and instructors well. It is not reasonable to have both Add and Drop dates on the same day in H1 and H3. Similarly, in H2 and H4 Add date in the 4th week and Drop date on the last day of classes both come very late to serve students and faculty well. The main impetus for proposing new Add and Drop dates for half-term subjects is the need for more appropriate rules serving the teaching and learning needs of these particular types of subjects.

Also, decoupling half term and full term Add and Drop dates may reduce the incidence of students 'gaming' their enrollment for grade maximizing. It is possible that this would lead to a reduction in the incidence of large-scale migrations from a sub-term to a full term subject.

The proposal also calls for a week-long final exam period. This period falls on the last week of the half-term and is motivated by the need to provide a clear window within which final exams are given or final projects are due. This window is intended to bring all half-term subjects to a close during the same week and will allow for coordination with full term subjects. The proposal calls for a request to full term subjects to refrain from giving exams or having major assignments due that week.

The recommendations above result in the following number of class days[8]:

Fall term:

- H1, 32 class days including final week exam period
- H2, 31 class days including final week exam period

Spring term:

- H3, 33 class days including final week exam period
- H4, 32 class days including final week exam period

Legend for Figures 7 - 9 on the following pages.

H1 - first half of term, Fall
H2 - second half of term, Fall
H3 - first half of term, Spring
H4 - second half of term, Spring
EOT - End of Term period for full term subjects during which end of term rules apply
FEP - Final Exam Period for full term subjects
HT FEP – Final Exam Period for half-term subjects

[8] Vacation days and holidays are not counted as class days.

Figure 7: Current academic calendar showing Add and Drop dates for full term and half-term subjects.

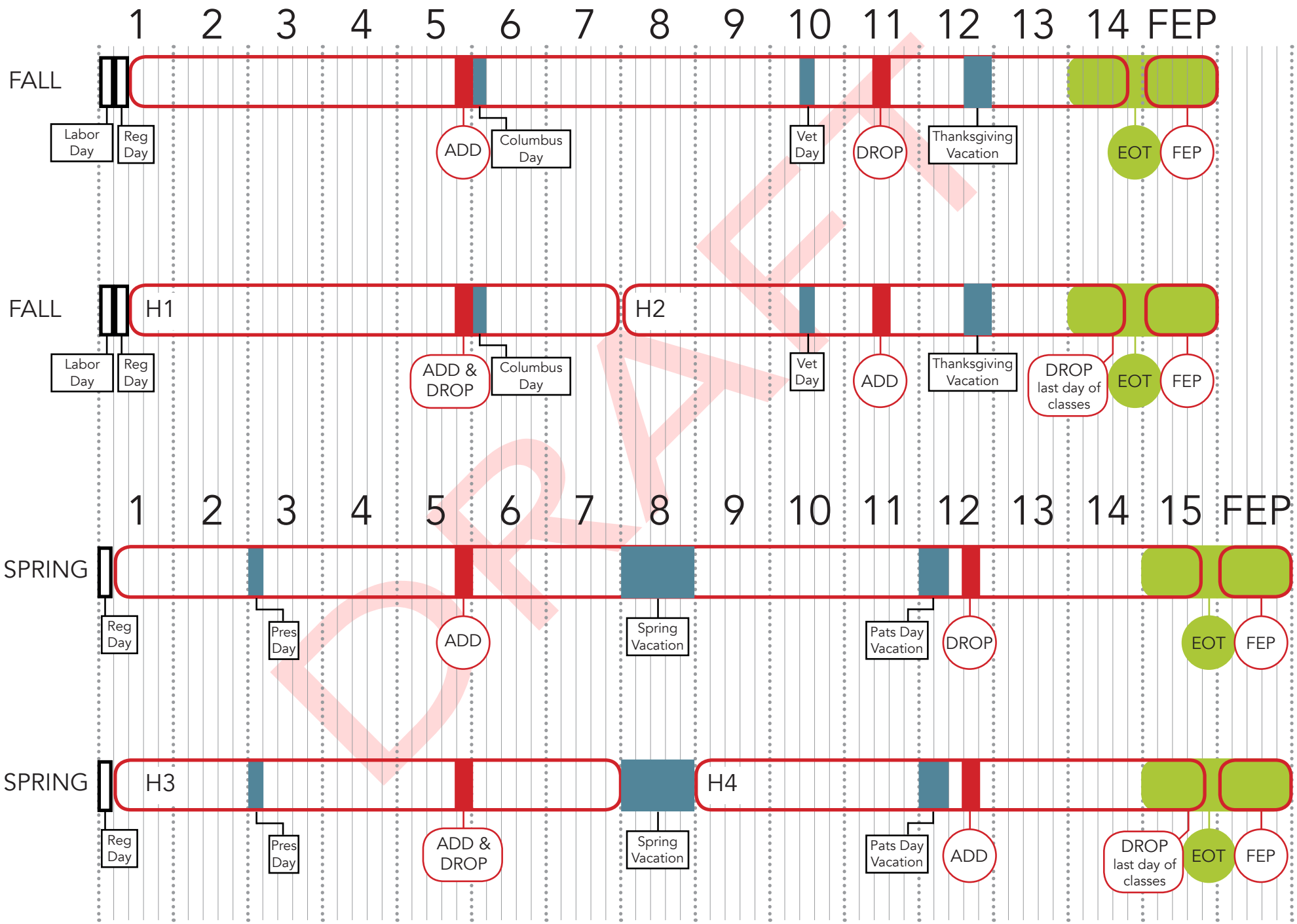


Figure 8: Proposed academic calendar showing new Add and Drop dates and Final Exam Periods (HT FEP) for half-term subjects. Add and Drop dates for half term subjects are scheduled at points during the half term proportional to their scheduling during the regular term for full term subjects.

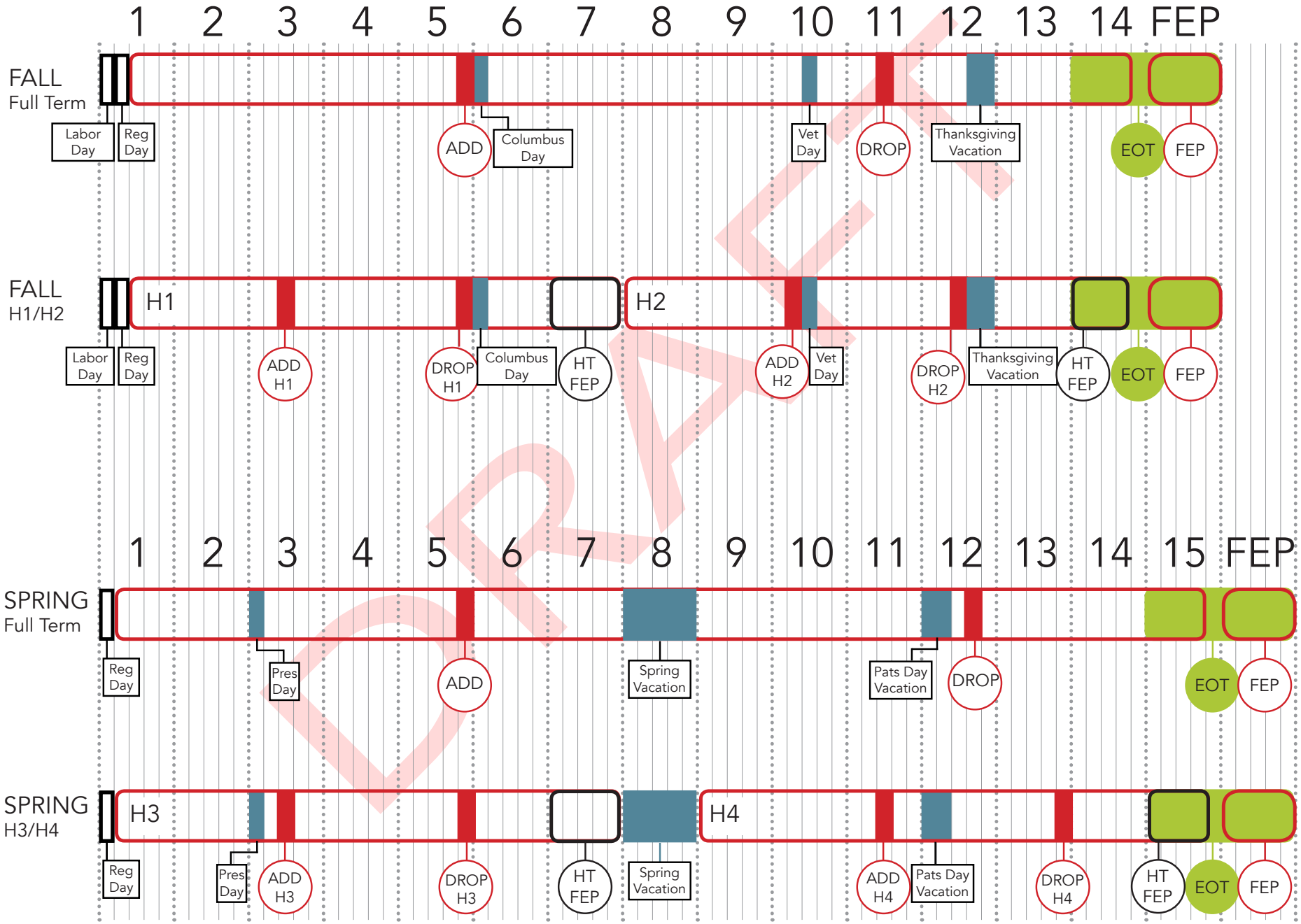
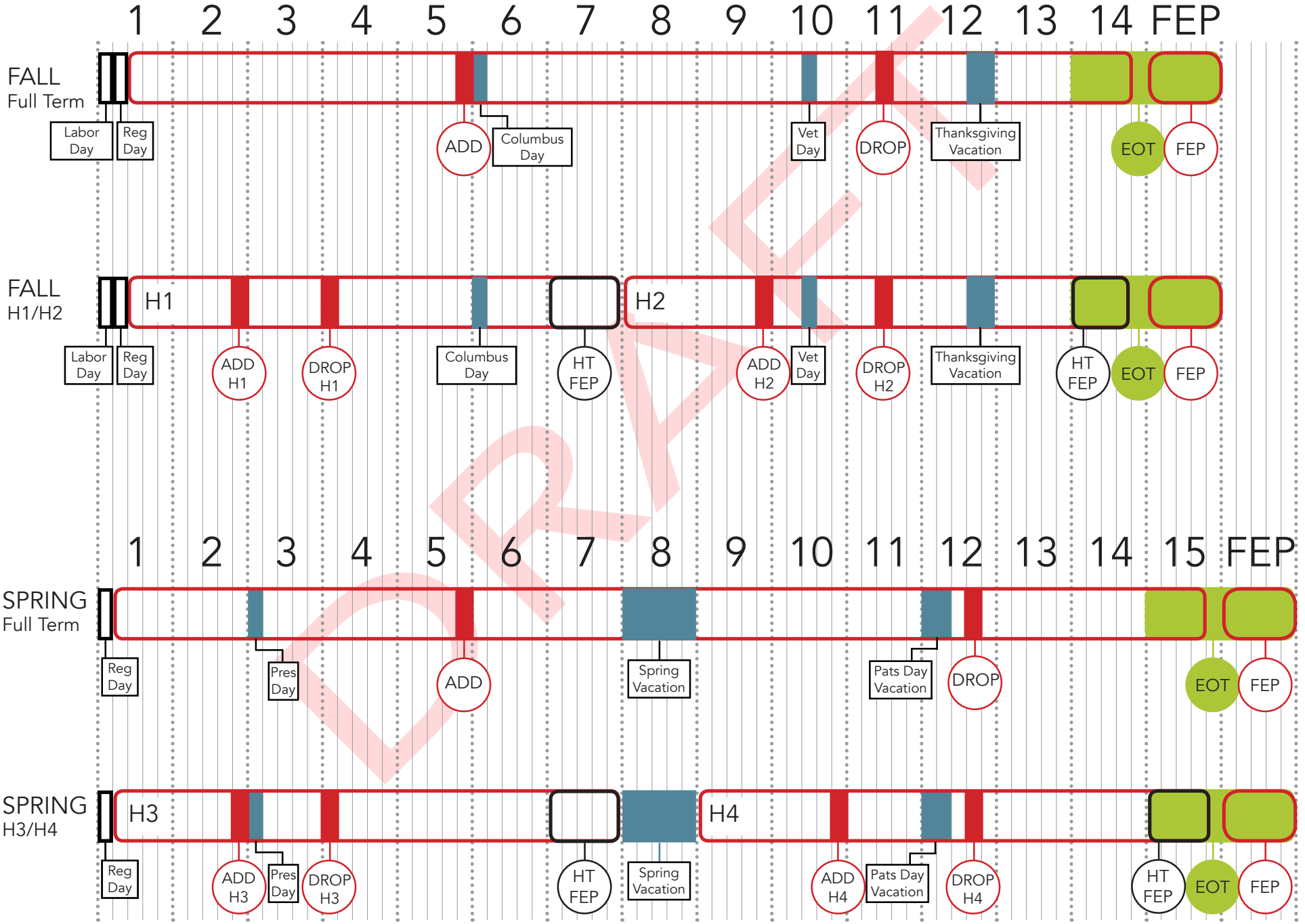


Figure 9: Variation of proposal shown in Figure 8 showing new Add and Drop dates for half term subjects. The only difference is half term Add and Drop dates are earlier in the half term reflecting stated concerns from students and faculty regarding the shorter period for making these decisions.



APPENDICES

APPENDIX A: THE CHARGE

FPC Subcommittee on Sub-term Subjects

Charge

October 29, 2015

Over the past few years, many professors, instructors and departments have been exploring the educational flexibility and pedagogical value of sub-term subjects. A sub-term subject is one whose duration does not encompass the entire regular fall or spring term and is offered as part of the regular curriculum of the department. These subjects may be the result of having reorganized a full term subject into two or more offerings or may be a subject whose scope simply does not require an entire term. A sub-term subject may be required by a department or offered as an elective. It may serve as a prerequisite or not and be a stand-alone subject or one of several comprising a sequence of subjects.

The 2014 Task Force on the Future of MIT Education recommended exploration of this diverse pedagogical option[9] (pg. 61). However, most existing policies and practices, and all existing Faculty Rules and Regulations are designed with respect to the dominant term-length offerings. For at least the past academic year, multiple faculty committees have discussed varied questions related to sub-term-length subjects without resolution. Each committee has identified questions within its domain, while also acknowledging strong connections to questions outside. Anecdotally, there is also a perception that, in addition to providing students with new curricular flexibility and new opportunities, the recent expansion in the number of sub-term subjects is having other impacts on the student experience, including in full-term subjects. Therefore, there is a need for a holistic perspective on this pedagogical innovation. This need begins with the collection and analysis of data and information generally to understand the current scope of sub-term curricular offerings and the motivations behind them, as well as their intended and potential growth, and impacts on students, faculty and the curriculum.

After its initial consideration, the Faculty Policy Committee (FPC) hereby charges a Subcommittee on Sub-term Subjects to explore these issues. The subcommittee will include members from the Committee on the Undergraduate Program (CUP), the

[9] *Institute-Wide Task Force on the Future of MIT Education, Final Report.* July 28, 2014.

Committee on Curricula (CoC), the Committee on Academic Performance (CAP) and the Committee on Graduate Programs (CGP) as well as from the FPC itself. Including representatives from all of these committees will allow the subcommittee to formulate a more complete picture of the present status and the relevant questions.

The subcommittee should provide the FPC with a snapshot of the present status in at least three ways:

- With the assistance of the Office of the Registrar, the subcommittee should obtain a count and a listing of new subjects shorter than one semester in length that have been created over the past five years, noting the start and end dates of each. The subcommittee should provide a definition – or several, if needed – of "sub-term subject", along with counts and lists. The subcommittee should also accurately describe trends regarding sub-term subjects.

- By seeking input from a selection of faculty who have taught subjects that have been recently split into sub-term subjects or faculty who are planning to develop sub-term subjects, and departmental leaders who have guided their creation, the subcommittee should provide an up-to-date picture of the various educational and pedagogical goals of these new offerings and a sense of how well faculty see these goals as being met. What are the motivations and/or incentives for creating various types of sub-term subjects and how do the faculty see their explorations in doing so developing in the near future? Although not explicitly requested in this charge, as a useful byproduct of their efforts, the subcommittee may choose to enumerate a preliminary list of emerging best practices by highlighting successful cases of sub-term subjects.

- By surveying students who have taken sub-term subjects over the past few years and who are still on campus, the subcommittee should provide an up-to-date picture of how students assess this mode of instruction, asking them to evaluate the impact on their learning and on their educational trajectory, as well as on their performance in other subjects. The subcommittee should also use appropriate methods to elicit honest assessments of the contribution of sub-term classes to improving or worsening the quality of student life, including the level of stress.

The subcommittee may also formulate other ways of improving the rendition of the current state of affairs and the forecasting of coming developments. It should make sure to include an assessment of the impact of sub-term-length subjects on full-term classes.

Based upon discussions of its findings above, the subcommittee should propose possible additions or changes to Faculty Rules and Regulations or other relevant policies. It may divide these proposals into two groups: (i) those which the subcommittee supports wholeheartedly and for which it anticipates broad support and that it therefore proposes for adoption; (ii) those that it believes may be necessary but that it recommends for further consideration before adoption. The subcommittee should enumerate the pros and cons of each proposed change to rules that it arrives at.

The subcommittee will report to the FPC by April 1, 2016. The FPC will then review and discuss the findings, consult with other faculty committees, and determine next steps as appropriate.

Membership:

John E. Fernández, FPC member, Course 4, Chair

George Barbastathis, FPC Member, Course 2
Zoya Bylinskii, CGP Member, Graduate Student, Course 6
Brian Canavan, Office of the Registrar
Scott Hughes, CAP Member, Course 8
Joseff Kolman, FPC Member, Class of 2017, Course 17
Anne McCants, CUP Chair, Course 21H
Roy Welsch, CoC Member, Course 15

Tami Kaplan, Faculty Governance Administrator, Staff to the Subcommittee
Jagruti Patel, Office of the Chancellor, will assist in designing and implementing a survey

APPENDIX B: SURVEY QUESTIONS AND RESULTS

Extended text responses have been omitted in full to protect the anonymity of respondents.

2016 Sub-Term Subjects Student Poll **INTERIM RESULTS AS OF 1/23/2016**

Student Feedback on Sub-term Subjects (SBTS)

1. Have you completed a sub-term subject at MIT?

Answer	Response	%
Plan to take	111	19%
Undecided	143	25%
Done	196	34%
Do not plan to take	131	23%
Total	581	100%

2. In the last two years, approximately how many sub-term subjects have you completed at MIT?

Answer	Response	%
1	60	37%
2	42	26%
3	15	9%
4	17	10%
5 or more	29	18%
Total	163	100%

3. Which sub-term subject did you complete most recently?

6.0002, 6.0001, 2.051, 15.871, 18.01A, 10.49, 15.57, 2.02A, 22.16, 15.493, 18.02A, 2.06, 15.872, 10.492, 11.202, 3.53, 11.S490, 16.842, 2.031, 10.491, 2.01, 5.37, 2.23, 10.493, 15.941, 10.494, 20.202, 11, 1.080B, 5.44, 5.35, 11.205, 3.371, 11.236, 15.902, 5.53, 16.687, 2.02B, 16.99, 21L.345, 22.12, 15.781,, 60001, 5.069, 1.472J, 2, 15.386 Managing in Adversity, 15.395, 5.561, 5.35 mod 3, Global Health, 14.122, 2.04a, 14.124, 22.11, 22.15, 14.387, 6.s076, 14.452, HST.160, 14.454, 15.356

Statistic	Value
Total Responses	190

4. In what part of the term did you take this class?

Answer	Response	%
First half of fall term	61	32%
Some part of fall term, but not the first or second half	11	6%
Second half of fall term	73	39%
First half of spring term	19	10%
Some part of spring term, but not the first or second half	1	1%
Second half of spring term	23	12%
Total	188	100%

6. What information did the professor provide about the structure of the class? Mark all that apply.

Answer	Response	%
List of assignments, including reading	168	88%
How grades would be determined (e.g., percentage of final grade attributed to exams, problem sets, class participation)	167	88%
Subject objectives	166	87%
Calendar of topics by class session	164	86%
Required materials (e.g., textbooks, course readers, lab materials)	151	79%
Add/Drop dates	87	46%
Other	3	2%

7. For this class, how did the professor handle add/drop?

Answer	Response	%
They used the registrar's guidelines:	143	86%
They used different add/drop dates (please describe)	24	14%
Total	167	100%

8. Thinking about this sub-term subject, was the number of units appropriate? Remember, the number of units for a course should correspond to the number of hours spent per week on the course.

Answer		Response	%
The units were less than they should have been		28	15%
The units were about right.		156	83%
The units were more than they should have been		5	3%
Total		189	100%

9. How would you rate your workload in this class as compared to a typical full-term subject? The workload in this sub-term subject was...

Answer		Response	%
Much lighter		11	6%
Somewhat lighter		26	14%
Comparable to that time		112	59%
Somewhat heavier		35	18%
Much heavier		6	3%
Total		190	100%

10. Managing the workload for courses can be a potential source of stress for students. Thinking about the term in which you took this sub-term subject, please indicate how the different subjects affected you.

Question	Not a source of stress	Slightly stressful	Moderately stressful	Very stressful	Total Responses
Managing the workload for my sub-term subjects	22%	42%	28%	7%	189
Managing the workload for my full-term subjects	13%	32%	41%	14%	188

11. You indicated this subject started in some part of the term, but not the first or second half. Since your sub-term subject did not conclude on cycle with full-term subjects, do you have any comments on how the timing of this subject had benefits or drawbacks to your workload?

Text Response
It was great because we finished by April before the hectic end of semester work kicked in.
The scheduling of this subject was terrible. I had to leave space for another full subject while only earning 8 units.
It was nice that one of my classes had its heavily-weighted portion (final) not aligned with my other classes'. It seems unfortunate that 40% of my grade for most of my classes for the semester is determined in a single week (finals week).
Benefits: The ability to zoom out of the regular core courses. Drawbacks: some of the classes did not have much value, in my opinion.
No
It made the weeks coming up on final exam easier
Since I ended up taking all 3 modules it was very much like a normal class in terms of work load timing, so there were no real benefits.

12. Did you take another sub-term subject during the other half of the term?

Answer		Response	%
Yes		86	49%
No		88	51%
Total		174	100%

13. Was the content of the additional sub-term subject linked to the one you described?

Answer		Response	%
No		27	31%
Yes, it explored the topic in more depth		9	10%
Yes, it was part of a sequence of content		48	56%
Yes, other		6	7%

14. Did you do any of the following during the other half of the term? Mark all that apply.

Answer	Response	%
Worked on or spent more time on my thesis	27	44%
Applied for jobs	17	28%
Participated in UROP	14	23%
Worked for pay	11	18%
Other	9	15%
Built or made something	3	5%
Other	3	5%
Participated in UPOP	3	5%
Worked through an externship or internship	1	2%
Studied for standardized tests	0	0%

Other
T.A. position had heavier workload during H2
In fall term, I did have a complementing half term subject
Got used to graduate school
Watched my children
Worked on my business
I had an important talk to prepare for
Coached my classmates for job interviews
Applied for iGEM
Theater Production
Added H2 class as Listener
Focused on other classes.

15. You indicated you have taken more than one sub-term subject. In which parts of the academic term did you take these classes? Check all that apply.

Answer	Response	%
First half of fall term	74	72%
Some part of fall term, but not the first or second half	7	7%
Second half of fall term	50	49%
First half of spring term	39	38%
Some part of spring term, but not the first or second half	3	3%
Second half of spring term	32	31%

16. Thinking about these additional sub-term subjects, overall, was the number of units appropriate? Remember, the number of units for a course should correspond to the number of hours spent per week on the course.

Answer	Response	%
The units were less than they should have been	15	15%
The units were about right.	81	79%
The units were more than they should have been	7	7%
Total	103	100%

17. Thinking about these additional sub-term subjects, overall, how would you rate your workload in theses classed as compared to a typical full-term subject? The workload in sub-term subjects are...

Answer	Response	%
Much lighter	2	2%
Somewhat lighter	11	11%
Comparable to that time	67	65%
Somewhat heavier	22	21%
Much heavier	1	1%
Total	103	100%

18. Managing the workload for courses can be a potential source of stress for students. Thinking about the other terms in which you took any sub-term subject, please indicate how the different subjects affected you.

Question	Not a source of stress	Slightly stressful	Moderately stressful	Very stressful	Total Responses	Mean
Managing the workload for my sub-term subjects	21.4%	40.8%	30.1%	7.8%	103	2.2
Managing the workload for my full-term subjects	10.7%	35.9%	41.7%	11.7%	103	2.5

19. Is there anything else you would like to tell us about the additional sub-term subjects you completed?

Statistic	Value
Total Responses	30

20. Have you been a TA for a sub-term subject at MIT?

Answer	Response	%
No	280	96%
Yes, more than once	3	1%
Yes, once	8	3%
Total	291	100%

21. To what extent do you agree with the following statements about being a TA for a sub-term subject?

Question	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Total Responses	Mean
Being a TA for a sub-term subject was more stressful than being a TA for a full-term subject	0.0%	18.2%	54.5%	9.1%	18.2%	11	3.3
I had enough time to properly evaluate the students enrolled in sub-term subjects (e.g., grade problem sets and tests)	9.1%	54.5%	9.1%	27.3%	0.0%	11	2.5
Students enrolled in the sub-term subject understood the rules governing the class (e.g., drop and add dates, grading policies)	18.2%	63.6%	0.0%	18.2%	0.0%	11	2.2

22. What are the POSITIVE aspects of being a TA for sub-term subjects, if any?

Text Response
The work load only takes up half the time.
Good check-points for evaluating the students, achievable goals
easier to manage my workload
A concentrated amount of time to work with students
Precision topic coverage
Done fast and get to spend the rest of the semester on research

23. What are the NEGATIVE aspects of being a TA for sub-term subjects, if any?

Text Response
None
More assignments, quizzes, exams
Too short of a time to develop in depth knowledge
Difficult to help students who lack all prerequisites
Don't get to know students. Always getting ready for or grading an exam, so less time to spend on material.

24. Hypothetically, if the same educational material was available as a full-term subject and a set of sub-term subjects, in which would you enroll?

Answer		Response	%
I would definitely enroll in the full-term subject		82	20%
I would probably enroll in the set of sub-term subjects		115	29%
I would probably enroll in the full-term subject		168	42%
I would definitely enroll in the set of sub-term subjects		36	9%
Total		401	100%

25. Whether or not you have taken a sub-term subject, what is your impression of the workload in sub-term subjects? The workload in sub-term subjects is...

Answer		Response	%
Much lighter		12	2%
Somewhat lighter		120	21%
Comparable to that time		292	52%
Somewhat heavier		125	22%
Much heavier		13	2%
Total		562	100%

Faculty Feedback on Sub-term Subjects (SBTS)

1. Have you taught a sub-term subject in the last five years?

Answer	Response	%
No	0	0%
Yes, once	12	29%
Yes, more than once (this could be two instances of the same SBTS, offered in different terms)	29	71%
Total	41	100%

2. Do you intend to teach more or fewer sub-term subjects in the next few years?

Answer	Response	%
I will teach more sub-term subjects	9	22%
I am not planning to change the number of sub-term subjects I teach now	21	51%
I will teach fewer sub-term subjects	2	5%
I will not teach sub-term subjects again	3	7%
Not sure	6	15%
Total	41	100%

3. To your knowledge, does your department intend to offer more or fewer sub-term subjects in the next few years?

Answer	Response	%
My department will offer more sub-term subjects	7	17%
My department is not planning to change the number of sub-term subjects offered	11	27%
The department will offer fewer sub-term subjects	1	2%
Not sure	22	54%
Total	41	100%

5. In what part of the term did you teach this class?

Answer	Response	%
First half of fall term	13	33%
Some part of fall term, but not the first or second half	0	0%
Second half of fall term	12	30%
First half of spring term	6	15%
Some part of spring term, but not the first or second half	0	0%
Second half of spring term	9	23%
Total	40	100%

6. For this class, how did you handle add/drop?

Answer	Response	%
I used the registrar's guidelines	36	90%
I used different add/drop dates (please describe)	4	10%
Total	40	100%

7. What information did you provide to students about the structure of the class? Mark all that apply.

Answer	Response	%
How grades would be determined (e.g., percentage of final grade attributed to exams, problem sets, class participation)	38	95%
Add/Drop dates	11	28%
Subject objectives	38	95%
Required materials (e.g., textbooks, course readers, lab materials)	37	93%
Calendar of topics by class session	36	90%
List of assignments, including reading	36	90%
Other	5	13%

8. Thinking about this subject, how do you feel about the allocation of materials for the number of weeks the class was in session?

Answer	Response	%
I had much more material than I could cover	2	5%
I had more material than I could cover	11	27%
I had about the right amount of material	28	68%
I had less material than I could cover	0	0%
I had much less material than I could cover	0	0%
Total	41	100%

9. Thinking about this subject, was the number of units appropriate?

Answer	Response	%
The units were less than they should have been	2	5%
The units were about right	38	95%
The units were more than they should have been	0	0%
Total	40	100%

10. You indicated your department will offer MORE sub-term subjects in the next few years. Please describe some of the reasons for this expansion.

Text Response
There are lots of topics that ought to be covered in the curriculum, but can be covered in 6 weeks rather than in a full semester.
Graduate courses on specialize subjects are appropriate for sub term courses
more flexibility and modularity in curriculum and greater flexibility for students
Flexibility to add more topics of current interest to students.

11. You indicated your department will offer FEWER sub-term subjects in the next few years. Please describe some of the reasons for this reduction.

Text Response
In my opinion, and that that of some other colleagues, these half-term subjects are not working well as part of our revised curriculum. Dividing 1.018, which used to be a full term subject, into A and B, has not worked. It is not a subject that can easily be 'modularized'. And it is a subject that is taken by students from diverse majors, so there is the issue of what the do for the other half term if they only take 1.018A and not 1.08B. The subject was designed as a one term subject and the division was imposed by the revision of the Department Curriculum. Perhaps half-term subjects could work if designed in advance for this time period, but I am not convinced that it is a good model.

12. Thinking about subjects generally, what is your impression of the workload in typical sub-term subjects as compared to typical full-term subjects? The workload in sub-term subjects is...

Answer	Response	%
Much lighter	0	0%
Somewhat lighter	3	8%
Comparable	28	70%
Somewhat heavier	9	23%
Much heavier	0	0%
Total	40	100%

APPENDIX C: HISTORICAL DATA – CAP Petitions

	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015
Total Petitions for Term	**152**	**159**	**110**	**191**	**204**	**203**	**171**
Petitions for All Partial-Term Subjects in Term	**4**	**3**	**6**	**2**	**10**	**18**	**10**
	2.6%	1.9%	5.5%	1.0%	4.9%	8.9%	5.8%
Subject							
1.060A						1	
1.061B					1		
1.070B					1		
Total Petitions for Subjects in Course 1	2	2	0	1	3	1	0
Petitions for Partial-Term Subjects in Course 1	0	0	0	0	2	1	0
	0.0%	0.0%	0.0%	0.0%	66.7%	100.0%	0.0%
2.00					2	1	
2.01			1		1		1
2.02A					1		
2.02B							1
2.03		1	1			1	2
2.031		1	1				
2.04A						2	
2.051					1		
2.087			1				
Total Petitions for Subjects in Course 2	4	14	10	12	15	15	10
Petitions for Partial-Term Subjects in Course 2	0	2	4	0	5	4	4
	0.0%	14.3%	40.0%	0.0%	33.3%	26.7%	40.0%
5.35	1						
5.38						1	
Total Petitions for Subjects in Course 5	9	1	9	4	12	8	7

Petitions for Partial-Term Subjects in Course 5	1	0	0	0	0	1	0
	11.1%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%
6.0001					2	4	4
6.0002						4	
Total Petitions for Subjects in Course 6	24	23	22	51	38	43	28
Petitions for Partial-Term Subjects in Course 6	0	0	0	0	2	8	4
	0.0%	0.0%	0.0%	0.0%	5.3%	18.6%	14.3%
10.03						1	
10.490				1			
Total Petitions for Subjects in Course 10	3	2	2	1	3	6	1
Petitions for Partial-Term Subjects in Course 10	0	0	0	1	0	1	0
	0.0%	0.0%	0.0%	100.0%	0.0%	16.7%	0.0%
18.01A	1		1				2
18.02A	1		1		1		
Total Petitions for Subjects in Course 18	7	12	9	16	18	18	23
Petitions for Partial-Term Subjects in Course 18	2	0	2	0	1	0	2
	28.6%	0.0%	22.2%	0.0%	5.6%	0.0%	8.7%
21L Samplings	1	1		1			
21M.805						3	
Total Petitions for Subjects in Course 21	29	29	14	17	29	41	11
Petitions for Partial-Term Subjects in Course 21	1	1	0	1	0	3	0
	3.4%	3.4%	0.0%	5.9%	0.0%	7.3%	0.0%