

Report of the Ad Hoc Committee to Review Class Sizes and Enrollment Caps

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Date: December 2, 2022

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Executive Summary

The faculty of the University of Delaware is committed to creating transformative learning experiences that positively impact their students. However, some faculty and students have experienced adverse impacts on pedagogy, learning, and workload due to increasing class enrollments, large-enrollment sections that are inappropriate for the learning goals of the course, or imbalanced section sizes.

In Spring 2021, the UD Faculty Senate formed this ad hoc committee to study and address concerns about the pedagogical impacts, potential workload inequities, and perceived lack of University and departmental policies regarding class size and enrollment. Focusing on the teaching objectives of the University of expanding student access and increasing student success rates while promoting workload equity for faculty, the committee carefully studied the impacts of large, increasing, and uneven enrollments on student learning and workload for faculty members.

Over the 2021–22 academic year, the committee analyzed course enrollment data, conducted a university-wide faculty survey, interviewed and surveyed department chairs, reviewed current University policies related to class sizes, and conducted a literature review of best practices in pedagogy.

This report provides a detailed summary of the committee’s findings, including listing immediate concerns, identifying possible improvements to departmental and University policies, and specifying faculty support and development resources. The committee acknowledges that some large classes are inevitable and that some large-enrollment courses can provide meaningful learning experiences for students. Nonetheless, this report summarizes trends that adversely affect student learning and the workload of faculty with heavy teaching loads.

Some conclusions in this report are not surprising. A large body of empirical research demonstrates that increasing course enrollments results in lower student engagement, decreased learning outcomes, higher faculty workloads, and diminished student and faculty satisfaction. Our faculty survey responses reflect these concerns. Over the long term, addressing these problems requires ongoing consideration of student and faculty experiences, faculty workload, and the role of unit administrators in making teaching assignments and implementing policies.

The committee's findings are summarized below:

- While the average class size of undergraduate courses at the University has not increased significantly between 2016 and 2021, several individual courses and instructors experienced significant increases in class size and enrollment.
- Most workload and P&T documents do not address class size. As a result, faculty views regarding workload expectations and teaching assignments vary. Nonetheless, the faculty survey finds that faculty agree that teaching higher enrollment courses requires more time and effort to maintain the same breadth and depth of learning objectives, student learning experiences, and student learning outcomes than teaching in small-enrollment environments. Thus, departmental workload policies and the annual workload agreements between faculty and chairs should address course enrollments.
- While large-enrollment sections comprise a small percentage of all courses offered at the University, they cover between 30 to 40 percent of the undergraduate student credit hours. Yet, most current workload policies do not account for the increased workload associated with large-enrollment classes. There are pedagogical and workload equity concerns, especially in cases where departments offer the same course both in small- and large-enrollment settings.
- The faculty survey responses regarding growing class sizes indicate significant adverse pedagogical impacts. To address these shortcomings, instructors require resources and support (such as teaching resources, pedagogical training, and workload compensation).
- The pedagogical viability of large-enrollment sections often correlates with the availability of high-quality teaching assistants who not only have an excellent understanding of the course material but also perform their duties conscientiously and competently.
- According to the chair survey, many department chairs report that they consider class size in teaching workload assignments. However, there is a lack of formal policies that provide guidelines for workload equity.

To better understand and address the above concerns, the ad hoc committee recommends that

- Within departments and schools, curriculum committees study the relationship between section sizes and curricular objectives to determine appropriate section sizes for major and general education courses. Further, the ad hoc committee recommends that executive committees consider current workload documents teaching workload assignments to identify patterns of workload inequity. Both curriculum and executive committees should periodically review and report on these issues to the unit chair or director.

- Department chairs and school directors periodically report changes in class size, section imbalances, and exceedance of enrollment caps to their dean to secure appropriate resources and support for additional sections and for faculty.
- Chairs and deans develop creative ways to promote workload equity in cooperation with the faculty and to document these solutions within college and unit policies. Department policies should address teaching assignments of large and relatively larger classes to promote workload equity and faculty wellness. Particular attention should be given to faculty with heavier teaching assignments and larger classes, including CT, pre-tenure, and temporary faculty who are less protected from teaching workload inequities. Policy documents should recognize these differences and list appropriate support mechanisms.
- Teaching policies should be guided by scalability. While some policies may not impact the delivery and workload required for small classes, they often have significant adverse impacts on the pedagogy and workload required for large classes.
- Across units, department chairs and school directors meet to discuss issues of faculty workloads and equity and share best practices. Guidelines for how to account for workload in teaching assignments, annual appraisals, merit considerations, and promotion and tenure could help create greater consistency across units, even if the nature of teaching across units varies significantly.
- Teaching support centers (e.g., CTAL) assist faculty who teach large classes by developing workshops and teaching materials that promote and employ effective teaching and learning methods while maintaining a balanced workload. (The committee recognizes and commends the efforts of many faculty across campus who have put in significant effort to uphold high standards of teaching, learning, and student engagement in large classes.)
- Chairs, deans, the Graduate College, and CTAL continuously coordinate to effectively recruit, adequately compensate, and thoroughly train graduate (and undergraduate peer) teaching assistants to provide adequate support of undergraduate learning across campus.

Introduction

Resolution and Committee

On April 5, 2021, the Faculty Senate approved a [resolution](#) (Appendix 1) to establish an Ad Hoc Committee to Review Class Sizes and Enrollment Caps. In support of this resolution, the CT Caucus provided a [Memo on the Resolution](#) (Appendix 2) that outlined the motivating concerns including (1) increases to class sizes without adjusting faculty workloads, (2) increases to enrollment caps or enrolling students beyond official enrollment caps, (3) significant discrepancies within and between departments regarding class size and workload, and (4) significant discrepancies in class size between sections of the same course. The memo notes that these problems negatively impact students by creating inequitable and inconsistent learning opportunities, and they negatively impact faculty as imbalanced efforts receive equal workload. Faculty members with primary teaching appointments are particularly vulnerable to such workload inequities. In the memo, the CT Caucus asked to review current department policies related to workload, class sizes, and enrollment caps. In their memo, the CT Caucus emphasized that class sizes and enrollment caps were of concern prior to the coronavirus pandemic, and that the pandemic amplified these issues.

In response to this resolution, COCAN formed an ad hoc committee of volunteers representing faculty (CT and TT) from all colleges; the committee also included student representatives. The members of the committee are:

- Jennifer Biddle (Marine Science & Policy) - TT
- Martha Buell (Human Development and Family Sciences) - TT
- Heather Doty (Mechanical Engineering) - CT
- Tori Glover (Student Government) - undergraduate representative
- Matt Kinservik (Vice Provost) - TT
- Kalmia Kniel (Animal & Food Sciences) - TT
- John Morgan (Physics) - TT
- Lauren Mosesso (Graduate Student Government) - graduate representative
- Todd Royer (KAAP) - TT
- Kathy Schell (Nursing) - TT
- Pak-Wing Fok (Mathematics) - TT
- Jens Schubert (Economics) - CT
- Anu Sivaraman (Marketing) - CT
- Daniel Stevens (Music) - TT
- Sheara Williamson (KAAP) - CT

At its first meeting on June 11, 2021, the committee received its charge ([Appendix 3](#)). The committee's charge includes three primary objectives: (1) review current

departmental policies, documents, and practices; (2) review enrollment caps and actual enrollment data since the 2017 fall semester; and (3) identify and give examples of courses where pedagogical delivery, course content, assessment methods, and/or student learning outcomes differ significantly as a result of differences in class size/course enrollment. Meetings continued on a biweekly basis throughout the summer and fall 2021 and spring 2022 semesters. Subcommittees on data, pedagogy, and policy were formed to address specific questions pertaining to class sizes and enrollment caps. An extension to continue work into the spring 2022 semester was granted by the Faculty Senate at their December 2021 meeting. This report documents the committee's findings and recommends modifications to existing policies for future consideration.

Questions for Committee Consideration

Questions pertaining to class size and enrollment are broad in scope. Class sizes and enrollment caps are the product of numerous dynamic institutional processes and policies, including curriculum changes, workload policies, formal and unwritten expectations for promotion, faculty hiring, facilities, course and room scheduling, and student demographics. Given the broad range of issues related to class size and enrollment, the committee could not pursue every possible line of inquiry¹ and focused on questions specific to the following main concerns: (1) measuring increases in class size since Fall 2016, (2) identifying and documenting instances in which class sizes vary between sections, (3) recording faculty experiences and perspectives related to class size and enrollment, (4) identifying pedagogical impacts of large and increasing class sizes, and (5) documenting the current state of department policies and practices with regard to workload and class size.

Through preliminary discussions, the committee developed a list of sub-questions to guide the work of the subcommittees:

Course Enrollment Data:

- Are there undergraduate courses that experienced significant increases in enrollment between 2016 and 2021?
- Are there undergraduate courses that have significant enrollment imbalances across offered sections?
- How many courses experienced COVID-related increases in enrollment?
- How frequently do enrollments exceed enrollment caps?

¹ For example, the committee did not consider questions of workload and class size with regard to online teaching.

- How are large enrollments, changes in enrollment, and exceeded caps distributed across specific cross sections, including instructor rank, college, and departments?
- What are the average class sizes for faculty by track (CT, TT)?
- Within units, does enrollment data show faculty rotation through large courses, or large sections within courses?

Pedagogy:

- How do increases in class size impact the overall educational experience?
- How do increases in class size impact pedagogical course delivery and student learning?
- What are best practices for faculty with large classes to maintain a balanced, equitable workload while ensuring high student impact and learning outcomes?

Policy Data:

- How many workload, merit, and promotion documents address class size?
- For workload, merit, and promotion documents that address class size, how is it referenced and/or measured?
- What are best practices at UD (or other institutions) to address large-enrollment classes in workload and promotion documents?
- How do workload, merit, and promotion documents account for additions to course workload, such as honors add-on sections, second writing requirement, or writing-intensive sections?

Methods of Data Collection and Analysis

To address the questions above, the committee collected and analyzed data from the following four sources: (1) enrollment and course cap data (Fall 2016 to Spring 2021) obtained from the Registrar's Office; course listings and instructor status data (TT, CT, adjunct) obtained from the Office of Institutional Research and Effectiveness (Fall 2017 to Spring 2022); (3) survey and interview data of unit chairs, directors, and course schedulers to identify internal policy documents and procedures for course scheduling (the policy subcommittee developed and implemented the survey in Fall 2021 and prepared a comprehensive report, see [Appendix 6](#)); and (4) university-wide faculty survey data to measure and document faculty experiences, attitudes, and expectations about course size, workload, compensation, and pedagogy over the last five years (the pedagogy and enrollment subcommittees designed and implemented the survey in Spring 2022, the cumulative results and a detailed analysis of this survey are [Appendix 4](#) and respectively [Appendix 5](#).) Finally, with help from CTAL, the committee reviewed

and summarized empirical studies about the relationship between class size and student learning, student and faculty satisfaction, and pedagogy. ([Appendix 7](#) provides a summary of best practices and empirical findings in the form of an annotated bibliography.)

Summaries of the committee's findings are provided below, along with policy recommendations for consideration by university administration, department leadership, and the Faculty Senate. This report includes recommendations that can be implemented immediately to improve equity within units and support impactful pedagogy as well as recommendations that invite more sustained consideration as the university plans for growth of total enrollment and of colleges and departments over the coming years.

Summary of Findings

This committee was formed to address three broad concerns, all of which stem from a general lack of unit-level policy statements that regulate the creation, increase, workload, and instruction of large class sections. The first concern involves matters related to significant increases to class size. Specifically, faculty report situations in which faculty are assigned large classes or classes that increase significantly in size without changes in workload recognition, administrative support (e.g. TAs), or expected learning outcomes. These changes give rise to a second concern: equity in workload and wellness of faculty who are most directly impacted by large classes, including our temporary, CT, and pre-tenure faculty. Finally, the committee began its work with the concern that changes in class size impact the educational experience and learning outcomes for our students. Although it is possible to teach some large classes effectively and in a way that engages the students, in some cases, decisions regarding enrollment caps and increasing class sizes are made irrespective of pedagogical and curricular concerns.

The committee acknowledges that individual faculty members and administrators will hold divergent views and opinions on the realities that give rise to these concerns.² It is beyond the scope of this committee to provide solutions to these complex issues. Our primary concern has been to find, analyze, and report data that is relevant to the above concerns and to make preliminary policy suggestions based on these data. In the following subsections, the report will provide summaries of findings specific to the committee's study of enrollment data, current policies and practices, and pedagogical considerations.

² For example, in the Faculty Survey ([Appendix 4](#), section V: Teaching Workload), respondents shared widely different opinions regarding the amount of additional workload compensation an instructor should receive if their class size were to double.

Some initial summary observations are given here in order to provide a general framework for understanding the findings reported in the subsections below. With regard to enrollment data, it is critical to understand that changes in class size are rarely visible at the aggregate level. As with any large dynamic system, aberrations disappear in averages. Likewise, consistent average section sizes may hide the fact that one section of the same course may be a large lecture section (>150 students) while other sections of the course are smaller (<40 students), despite having the same curricular goals. Although large courses (>60 students), courses with significant increases, and courses with significantly different section sizes are a minority across campus, many faculty (42% of survey respondents) nevertheless report that their undergraduate and graduate classes sizes have increased over the past five years. These same faculty report significant impacts of these increases to pedagogy and learning outcomes, and many express frustration about the lack of workload or merit recognition that these changes receive. General increases in class size do not impact all faculty in the same way. In particular, the pedagogical and personal impact of increasing class sizes are magnified for faculty with larger teaching workloads, especially workloads that include multiple large class sections. Accordingly, while the policies the committee recommends may have little or no impact on most faculty, there remains an acute need for policies that maintain workload equity for faculty most impacted by enrollment increases.

The outline of best pedagogical practices provided by the pedagogy subcommittee, summarized below and developed in [Appendix 7](#), points to strategies for teaching large sections without sacrificing student learning outcomes or engagement. Nevertheless, there remains a disparity between the best practices and faculty attitudes and experiences about the pedagogical changes necessitated by increasing section sizes (see the Faculty Survey data in [Appendix 4](#), Part IV: Pedagogical Impact). While many UD faculty invest significant time and effort to maximize student engagement in large classes, there remains a general need for disseminating best pedagogical practices to faculty assigned to teach large class sections as well as consideration by upper administration about increasing faculty resources as student enrollment grows. Some faculty who teach large class sections state that the viability of a successful class is directly tied to resources, most especially the availability of dependable, qualified TAs who can assist with grading, tutoring, labs, and other aspects of class management.

Current Departmental Policies and Practices

The policy subcommittee was formed to examine references to class size and enrollment in departmental policy documents, including unit workload documents, P&T documents, and merit metrics used in annual appraisals. Their investigation included a

review of departmental policy documents, a survey to chairs and directors, and interviews with several chairs whose departments do consider class size in workload assignments and evaluations. Their full report is included in [Appendix 6](#).

The data produced from their review of 55 academic programs' policy documents reveals that there are no standardized approaches to accounting for class size and enrollment. Only a minority of academic programs reference these metrics at all in their policy documents. While 29% (16/55) of academic plans mention class size, only 18% (10/55) specify the size of class in their departmental policies. Within units whose policy documents do mention class size, these references are found most often in their P&T and workload documents. A few (5.5% or 3/55) academic programs directly reference service courses or honors add-on courses (which are often taught as uncompensated overloads). Most programs (60%; 33/55) had no mention of any of the keywords used to identify references to class size and enrollment in their policy documents.

A survey of chairs and directors (N=35, including 2 department schedulers) reveals that many chairs (~77%) give "some" consideration to class size when assigning workload and evaluating teaching. However, consistent with the policy document study, 71.4% of respondents indicated that their unit has no specific policies that refer to course assignment and class size. Most respondents (65.7%) also claimed that they do not consider teaching effectiveness when determining class sizes in their units.

Qualitative survey results, supplemented by interviews with five chairs from units that do take class into consideration, provide perspectives that help contextualize the above data. Four themes emerged from these interviews. First, when considering assigned teaching workload, these chairs take into account many considerations in addition to class size, including curricular goals, course level, writing requirements, faculty status, availability of TAs, faculty wellness, requests from upper administration, and faculty preferences.

Regarding departmental policies, a second theme is that units whose policy documents reference class size typically do so by awarding additional points in merit metrics or using class size to contextualize research output, by including general references to class size in workload, or by stating specific policies to create equity (e.g. by specifying that faculty will teach a 100+-person class, or by rotating large-class assignments). Notably, some respondents referenced the impact of the AAUP-UD Collective Bargaining Agreement, which does not indicate different workload credit based on class size (i.e., a 3cr class carries the same weight, no matter the class size).³ Third, some

³ See Article XI of the *The Collective Bargaining Agreement between the University of Delaware and the University of Delaware Chapter [of the] American Association of University Professors*. In particular,

departments claim to follow informal policies that address class size when making course assignments, including providing TAs, capping classes according to pedagogical, workload considerations, or classroom/lab sizes, giving extra teaching credit for large classes, and using workload documents as a guide while making informal attempts to maintain faculty workload equity.

Finally, a fourth emergent theme is that chairs do not typically use data on teaching effectiveness when determining class sizes in their unit. However, there is a general perception that smaller class sizes positively correlate with increased student learning. Many chairs would like to reduce class sizes, but attempts to do so have been restricted by lack of resources (e.g. budget, faculty, TAs).

Pedagogical Considerations

Changes to the size of course sections impact teaching, learning, and assessment. Even small increases (4–5 students) can impact learning in laboratory courses that feature significant hands-on, student-centered learning and faculty-student interactions. However, while classes that experience significant increases in class sizes and historically large sections tend to be more lecture- and exam-focused, it remains possible to leverage best pedagogical practices to keep students engaged in learning and to achieve appropriate learning outcomes even in large classes. Nevertheless, the committee found several trends that underline the need for examining the pedagogical impact of increasing class sizes, including faculty expectations about the impact of increasing class sizes, the lack of policy documents that speak to the pedagogical demands and expectations for teaching large class sections, the value and necessity of reliable TAs for supporting large classes, and the need for distribution of best pedagogical practices pertaining to large classes.

Findings from empirical studies (see [Appendix 7](#)) show a significant negative effect of class-size on student achievement, student-learning satisfaction, and evaluations of instruction. Further, these negative impacts disproportionately affect first-generation students, women, and students from low socio-economic, disadvantaged backgrounds.

Best Practices

Dr. Rose Muravchick of CTAL contributed an overview of literature-based best practices for the teaching of large classes, which she defined as more than 100 students per section ([Appendix 7](#)). Briefly, she noted the method of instruction may be more

section 11.8 stipulates that “Teaching workload assignments are accounted for in terms of credit contact hours, are articulated in departmental workload documents, and are administered through departments.”

important than the size of the class. One study suggested that discipline be considered when determining class size, and suggested Engineering, Biological Sciences and Social Sciences benefited most from class size reduction. She notes that students from minority populations are often disadvantaged in large courses, regardless of discipline. Additionally, first-year courses are especially impactful if delivered in smaller class sizes. The learning techniques or pedagogies required for successful large courses require significant investments of faculty time and institutional resources. Pedagogical techniques are available to effectively “shrink” the larger classes and provide successful student outcomes. In short, large classes should not be approached without a pedagogical shift and ample preparation.

Enrollment Data Analysis

The data subcommittee analyzed enrollment data and faculty survey data, focusing on undergraduate courses offered during the fall and spring semesters. The objective was to identify trends and variations in enrollment and differences in enrollment caps and class size across classes, faculty, and units, and over time. A comprehensive analysis poses several challenges due to the richness and detail of the data.

The following main findings emerge from the enrollment data analysis:

While the average class size of undergraduate courses at UD has not increased at the aggregate level, between 2016 and 2021, several individual courses and faculty have experienced significant increases in both enrollment cap size and actual enrollment. For some course sections, enrollment cap size and actual enrollment more than doubled.

The average enrollment cap of undergraduate courses is 42 students, ranging from 1 to 400. The average undergraduate class size is 36 students, ranging from 1 to 365 students per class section. On average, about three-fourths of all undergraduate classes have an enrollment of 40 or fewer students; and about one-eighth of all undergraduate classes have an enrollment of 66 or more students. However, 35 to 40 percent of the total undergraduate enrollment occurs in courses with section-enrollments of 66 or more students (large-enrollment sections). Only about 10 percent of all faculty (who teach at the undergraduate level) teach these large-enrollment courses, and several faculty teach multiple large-enrollment sections.

Similarly, while the actual enrollment beyond the enrollment cap has not increased, on average, between 2016 and 2021, 8 to 14 percent of undergraduate courses each semester have experienced enrollments exceeding the enrollment cap, increasing over time. For classes with enrollments beyond enrollment cap, on average, enrollment

exceeds the cap size by about 10 percent. However, in several cases, actual enrollment was more than twice the enrollment cap, and the data suggest that this trend is increasing.

At the aggregate level, undergraduate enrollment is balanced across sections of the same course taught by different instructors. However, there are several instances of significant section-imbalances at the individual course level. Each semester, between 70 to 120 class sections experience enrollments exceeding the average enrollment of the course by 20 percent or more (of all sections of the same course offered in the same semester). For courses with section-enrollment imbalances, on average, the imbalance is 60 percent of the total course enrollment. Note that these imbalances affect all class sizes, and in some cases create an imbalance of 90 percent in large-enrollment sections. For example, one instructor with a section-enrollment of 150 or more students taught 90 percent of all students in a semester while other instructors of the same course combined only taught about 10 percent of the total semester enrollment. While some of these enrollment imbalances might be due to student preferences, many of these imbalances result from differences in enrollment caps across the instructors who teach the same courses in the same semester. (In other words, they are the result of scheduled imbalances.) These stark imbalances are problematic for pedagogical delivery, student learning, and faculty workload fairness. Some courses distribute enrollment needs evenly across all offered sections but other courses have significant imbalances at the planning level with allocated enrollment capacities differences of up to 90 percent. These assigned stark differences in enrollment caps are evident at all undergraduate course sizes.

Because the enrollment data allows for identification of individual courses, departments, and instructors with increased cap sizes, enrollments, and section imbalances, the ad hoc committee decided not to list them in this report. Enrollment data and summary statistics are available upon request.

Faculty Survey Findings

The faculty survey provides a comprehensive overview of UD faculty members' experiences with and perspectives on class sizes and enrollment.⁴ The survey invited faculty to report changes in class size and enrollment, impact (anticipated or experienced) of class size increases on pedagogy, and to share their perspectives on and understanding of workload, merit, and promotion policies that pertain to class size. The ad hoc committee administered the survey in the Spring 2022 semester via a Google Form that was shared with UD faculty via email invitations from the faculty

⁴ The numerical survey data is available upon request.

senate. The survey consisted of five main parts, I Demographics, II Faculty Experiences and Class Sizes, III Teaching Effort and Support, IV Pedagogical Impact, and V Workload. [Appendix 4](#) provides the survey questions along with the aggregate data (generated by the Google Form), and [Appendix 5](#) provides an analysis of the data with respect to particular demographics, including undergraduate vs. graduate courses, faculty track (temporary, CT, TT), and, in some cases, faculty experience of class size growth over the last five years (increase vs. no increase). In this summary, the ad hoc committee highlights some of the significant trends that emerge from the survey results and interprets the findings.

Survey Respondent Demographics (Part I of the Survey)

Of 1,317 full time and part time faculty (<https://ire.udel.edu/quick-facts/>), 366 faculty completed the survey, with 306 and 60 faculty answering the undergraduate and graduate versions, respectively. (Note that some faculty may have completed the survey twice, once related to their undergraduate courses and once related to their graduate courses. Thus, the response rate is between 20 and 25 percent.)

Faculty from the College of Arts and Sciences comprise 54.1% of the total respondents. The remaining colleges and the Biden School each represent between 3-10% of the total respondents. 61.7% of respondents are TT (tenure track or tenured) faculty, 33.3% are CT faculty, and the remainder (5%) are temporary faculty. Faculty rank is divided evenly between Assistant, Associate, and Full professors (~30-31% each), while Instructors represent 8.2% of the total respondents. 57.7% of respondents identify as female, 36.9% identify as male, and the remaining 5.4% identify as non-binary, transgender, or prefer not to answer.

Faculty Experiences and Definitions of Small and Large Class Sizes (Part II)

The questions in Part II of the survey asked respondents to report their smallest and largest class sizes over the last five years, changes to class sizes, and their definitions of “small” and “large” class sections. The majority (83.6%) of respondents selected “undergraduate” as their primary teaching responsibilities, while 16.4% selected “graduate.” (Respondents could fill out the survey twice to provide data about both undergraduate and graduate teaching assignments and experiences.)

At the undergraduate level, over 90% of respondents reported that the smallest class size they had taught in the past five years was fewer than 41 students. About 50% of respondents reported that their largest class size was between 21–65 students, while 21.6% and 15.4% of respondents reported largest class sizes of between 66–100 and

101–150 students, respectively. Over 10% of respondents reported largest class sizes above 150 students over the last five years.

At the undergraduate level, about 42% of the respondents stated that they experienced increases in both actual enrollment and enrollment caps over the past five years. The majority (53.9%) of respondents defined fewer than 20 students as a small class section at the undergraduate level. Respectively, 21.2% and 22.5% of respondents defined a small class section as fewer than 10 and 40 students. 28.8%, 28.8%, 16.3%, and 10.8% of respondents defined a large class section as more than 40, 60, 100, or 150 students. (Survey respondents were asked to use these definitions when answering subsequent questions related to class size.)

At the graduate level, 41.7% of respondents reported increases in actual enrollment, while 30% reported increased enrollment caps over the past five years. 96% of respondents reported that the smallest class size they had taught in the past five years was fewer than 21 students, with 50% of respondents reporting small classes of 6–10 students. Two-thirds (66.7%) of respondents reported largest class sizes between 11–30 students, while 16.7% reported largest class sizes of more than 40 students. Respectively, 53.3%, 36.7%, and 10% of respondents defined a small class section as fewer than 6, 10, or 20 students, while 31.7%, 43.3%, 16.7%, and 6.7% defined a large class section as more than 10, 20, 30, or 40 students. (Survey respondents were asked to use these definitions when answering subsequent questions about class size.)

The analysis of the faculty survey class size data in Appendix 5 (Tables PedSur.A–PedSur.E at the undergraduate level, and PedSur.F–PedSur.J at the graduate level) provides more detail about the distribution of small and large class sections by faculty track. While distributions of small classes are relatively even across rank, responses by track indicate that temporary and CT faculty were more frequently assigned larger classes, especially those with enrollment between 101–150 students (see Table PedSur.B). Importantly, this reported faculty perception is confirmed by the actual enrollment data: between 2017 and 2021, across all undergraduate courses, CT faculty were scheduled to teach classes that have larger enrollment caps, on average (the average cap of CT-taught classes exceeded the cap of TT-taught (on track or tenured) classes by 5 students). Note that at the 100-level, on average, the enrollment cap of TT-taught classes exceeded the cap of CT-taught courses by 27 students. At the 200-, 300-, and 400-level, however, on average, the enrollment cap of CT-taught classes exceeded the cap of TT-taught courses by 4, 8, and 5 students respectively.

This might explain why, CT faculty define a “small” class section differently, on average, than TT faculty. About four-fifths of TT respondents defined fewer than 20 students (or

even smaller) as “small” whereas less than two-thirds of CT respondents defined fewer than 20 students or less as a “small” class. One third of CT respondents defined less than 40 students as “small”.

In terms of “large” class sections, about three-fourths (72.9%) of respondents think that more than 60 students constitutes a large class. There are no significant differences between CT and TT definitions of large classes up to the 60 students. However, 23.1% of CT respondents define 100+ student class sections as “large”, whereas only 12.9% of TT faculty consider 100+ student class sections as large. Note that 36% of CT respondents reported that they have taught classes with more than 100 students in the last five years, compared to only 20% of TT respondents. On average, the enrollment data analysis shows that there are no significant differences in (1) the number large classes (60 or more students) taught by CT or TT faculty and (2) in the number of very big classes (150+ students) taught by CT or TT faculty. However, a significantly bigger portion of CT faculty than TT faculty teach large classes as there are fewer CT faculty overall. Further, on average, CT faculty teach classes with greater enrollments in the big enrollment sections (150+ students). On average, CT faculty teach 22 more students in their big sections than TT faculty. This difference in actual enrollment is not only the of student preference but also cap size. The cap size of CT-taught big classes (150+ students) is, on average, 15 students greater than the cap size of TT-taught big classes.

(See Tables PedSur.F–PedSur.J for survey statistics at the graduate level, where CT representation was too low for reliable comparison.)

Teaching Effort and Support (Part III)

The questions in Part III of the survey asked respondents to reflect upon the relationship between class size and curricular intent, teaching effort, and TA support. With regard to whether class size is appropriate for the learning goals of the course, comparing the rightmost “all” columns in Tables PedSur.K and PedSur.L reveals a striking difference in respondents’ perceptions at the undergraduate and graduate levels. At the undergraduate level, perceptions were spread somewhat evenly from 1 (strongly disagree) to 7 (strongly agree), whereas graduate responses cluster toward 7 (strongly agree). In both tables, faculty who experienced increases in class size or who teach large sections (here defined as ≥ 66 students) agreed significantly less than faculty who did not experience increases or large class sections that enrollment is appropriate for the learning goals of their course.

As Tables PedSur.M and PedSur.N show, significant numbers of faculty claimed that their teaching effort is proportional to enrollment at both the undergraduate and

graduate levels. This perception was expressed more frequently by faculty who have experienced increases in class size over the last five years. Temp and CT faculty also reported a significantly elevated perception of the proportion between enrollment and teaching effort.

At the undergraduate level, 29% of respondents who teach large sections “strongly disagreed” that they received adequate TA support from their department/college, with the remaining responses distributed somewhat evenly across the other six positions on the Likert scale. 38.9% of respondents who teach large graduate sections “strongly disagreed” that they received adequate TA support from their department/college. (See sections IIIa and IIIb in [Appendix 4](#).)

Pedagogical Impact (Part IV)

The faculty survey asked respondents to comment on the real or anticipated pedagogical impact of increasing class sizes with respect to four areas: undergraduate course design, student learning activities, student outcomes, and faculty-student interactions and assessment. Tables PedSur.O–PedSur.V represent the collected survey data at the undergraduate and graduate levels. Tables PedSur.O–PedSur.Q provide additional distinctions between responses from faculty whose class sizes have increased significantly over the last five years vs. those whose enrollment has remained constant. This distinction is important: it reveals that the real pedagogical impact experienced by those whose class sizes have increased is greater than the anticipated impact of respondents whose class sizes have remained constant. For example, 70.3% of faculty whose classes have increased report a decreased depth of course content, whereas 57.75% of faculty who have not experienced an increase anticipate a decreased depth of content. Please refer to Tables PedSur.O–PedSur.Q for a complete exposition of real and anticipated pedagogical impacts.

Of particular concern from a pedagogical perspective is the relationship between impacts on learning objectives and course content within course design at the undergraduate and graduate levels. For respondents whose class sizes have significantly increased over the last five years, 50.78% (undergraduate) and 64% (graduate) of respondents reported no change to the breadth of learning objectives. Similarly, 43.75% (undergraduate) and 60% (graduate) of respondents reported no change to the breadth of course content. At the undergraduate level, however, 70.31% of respondents whose class sizes have increased reported a decrease in depth of course content, with 18.75% reporting “no change” to depth and 18.75% reporting a “redesign” of course content. At the graduate level, 32% report a “decrease,” 32% report “no change,” and 28% report a “redesign” of depth of course content. These numbers

suggest that when class sizes increase, the depth of student learning decreases. (Please see the following subsection for more interpretation of the faculty survey data.)

In general, the faculty survey results show significant decreases in course elements associated with student-centered pedagogy and faculty-student interaction, and a significant increase in lecture-based instruction. However, there are other important stories that emerge from Tables PedSur.O–PedSur.V aside from the more predictable trends. For example, 14.84% of respondents whose undergraduate classes increased in size reported an *increase* in interactive learning in the classroom, and 3.91% reported an *increase* in experiential learning. The fact that such increases are possible suggests that, with proper support and faculty development, increases in class size do not necessarily mean a reduction in effective pedagogical practices. Notably, respondents whose class sizes increased redesigned their course and student learning activities more frequently and than was anticipated by respondents whose class sizes have not increased (see Tables PedSur.O, PedSur.P, and PedSur.Q).

Teaching Workload (Part V)

In Part V of the faculty survey, respondents were asked to comment on departmental policies (annual review and P&T) that pertain to large-enrollment classes and to share what they consider to be appropriate workload credit based on class sizes at various levels (100-level and 300/400–level) and increases (doubled enrollment). Responses to these questions are found in [Appendix 4](#). A majority (75.1%) of respondents noted that their “department does not differentiate between small and large sections in terms of annual teaching workload,” and 67.5% of respondents noted that their “department does not differentiate between small and large sections for P&T.” Only 8.7% and 13.4% note that their department does account for small and large class sizes in workload and P&T considerations, respectively. When asked about the appropriate workload for 100- and 300/400-level courses with enrollments of 75, 150, and 300 students, faculty responses varied significantly. For 100-level courses with a 75-student enrollment, 32.2% of respondents suggested a workload of 12.5%, the typical workload for most 3 cr. courses across campus. However, at 150 students, significantly fewer (13.4%) respondents selected that a 12.5% workload is appropriate. At 300 students, only 8.9% of respondents agreed that a 12.5% workload is appropriate. Generally, the higher the number of students, the larger the suggested workload, with significant clusters of faculty suggesting a 50% and 100% increase of workload for larger class sections. For 300/400-level courses, these trends are even more pronounced, with few faculty agreeing that a 12.5% workload is appropriate and larger clusters of faculty supporting a 50% to 100% increase of workload. The final question in this section addressed a scenario in which the enrollment in one’s course doubles. In this situation, 39.1% of

respondents noted that it is appropriate to receive a higher workload, and 34.7% of respondents thought it appropriate to receive double the workload. A minority (9.3%) of respondents claimed that the workload should remain exactly the same when the course enrollment doubles.

Comments (part VI)

At the end of the faculty survey, respondents were given the prompt: "*Please provide additional comments on how class enrollment size impacts any of the following: pedagogical delivery, learning outcomes, assessment methods, student engagement, student performance, faculty teaching workload, etc.*" Half (50.41%; 184/366) of the total respondents provided additional comments. Comments were reviewed independently by two members of the ad hoc committee and tagged according to the report topics and emergent themes that they addressed. The faculty responses are summarized below:

- 42 respondents mentioned that additional resources are needed (22.83% of respondents with comments).
- 120 respondents mentioned adverse impacts on pedagogy and/or student learning (65.22% of respondents with comments).
- 57 respondents mentioned an increase in workload (30.98% of respondents with comments).
- 3 respondents mentioned student evaluations (1.63% of respondents with comments).
- 4 respondents mentioned positive changes to pedagogy (2.17% of respondents with comments).
- 20 respondents mentioned workload inequity (10.87% of respondents with comments).
- 3 respondents mentioned academic integrity issues (1.63% of respondents with comments).

The representative comments below have been lightly edited to remove any identifying information. These comments give voice to concerns shared by many faculty across the UD campus.

- *My...classes have gone from [~50] students to [~120] each over the last three years. I receive the exact same workload for having [~350] students as I did for [~150]. I... recruit and train undergraduate TAs to help me in lecture [in order] to continue with active learning strategies. I now have [~20] undergraduate TAs per semester to help me with what I used to do on my own with [~50] students/class. I have also had to get rid of short answer questions on my exams and homework*

that requires feedback because I have no grading help and I cannot grade [~350] exams alone.

- *I teach a course that [~25%] of UD students will take. I don't have a TA for the lecture section, which is usually [~220-250] students. I spend a tremendous amount of time just responding to emails. When I do give an in-class assignment, it takes a large amount of time to grade, even with digital submissions. The effort for teaching this course is not evenly distributed in my department. Over the past 2 years, I've taught over 1,000 students and I get the same workload assignment as those [who] teach an equivalent number of credit hours to 5–10 students per class.*
- *In all areas [addressed by the prompt], there is an increased distance between the students and the professors. The class becomes impersonal, lacking human touch. Size increases in classes that are not designed or intended to be the size they become lower the quality of the experience for students and contribute to burnout for the professor.*
- *Class enrollment size impacts pedagogical delivery, assessment methods, student-student interactions, faculty-student interactions, and student engagement. Support from the university to design courses with large enrollments is always appreciated.*
- *I teach a capstone class. Class size has more than doubled (from 25 to 54) and this has a very negative impact on my ability to provide a quality capstone experience.*
- *There is so much pedagogical research on the benefits of active learning, interaction in teams, interaction with the instructor, creating spaces for students to show up as their whole selves, identifying students who need additional support, and building community, and so many instructors want to implement these leading-edge practices. But increasing class size severely limits instructors' ability to implement positive change that impacts learning outcomes and students' experiences. And it can also lead to reduction of otherwise positive student evaluations of teachers and courses. While we ""know"" that evaluation of teachers with student evaluations is problematic, our evaluation scores are still used directly in determining whether faculty should be renewed and determining merit-based increases (when available). Increasing class sizes has negative outcomes for students and creates obstacles to faculty success.*
- *I find that with larger classes, I resort more to pair or group-based deliverables, meaning students are delegating responsibilities among all groupmates and therefore are not necessarily demonstrating or receiving feedback on individual mastery. Separate from what was directly being asked in this survey... but there is a BIG difference in workload between teaching 2-3 sections of the same course (1 prep) and 2-3 different course preps. Our current CBA/faculty*

handbook, which is based on credit hours/contact hours, does not address this distinction at all because both scenarios have the same number of credit/contact hours.

- *I try very hard to use effective and research-backed teaching strategies in my courses, which requires an enormous amount of preparation and organization, and I consistently work to update and improve my courses based on each semester's experience. I feel that I am punished for doing so when someone who teaches straight from a textbook in lecture format receives the same amount of credit as I do (and therefore has more time available for other purposes such as research, for which they are rewarded).*
- *In larger classes, students depend heavily on TAs, and TA quality is not controlled adequately in any department I have seen. Assessments and grading must become automated, which reduces granularity and quality of feedback and personal interaction. That automation is very time-consuming, and is not what PhD professors should be doing with their time, but there is no alternative with larger classes. Reduced personal interaction results in less informal advisement, and reduced outcomes for everyone, but dramatically for *all* minorities. I am limited in how many students per semester I can get to know well enough to have a significant impact on their university experience; with larger classes, that number does not increase, so the overall experience for students suffers. In a class of 30 I can see misconceptions and doubt in student faces and address them in stride; in a class of 80 I have to try and predict all misconceptions and address them in every student, a waste of their time and mine. The larger a class, the more important educational design becomes, but I know of only two professors in my department who have taken courses in educational design.*
- *Class enrollment size has a direct impact on the types of pedagogical strategies I use in the course. For example, when the class size is too large (more than 40-50), I have to cut back on my use of active learning strategies (strategies that have strong empirical support for increasing student learning and engagement, improving student attitudes, and retaining underrepresented students). It is especially difficult to employ *interactive* learning strategies like small group work and whole-class discussions (strategies that support students in forming relationships with their peers and with me) when the class size is too large. // Class enrollment size has a direct impact on my assessment methods. It is much more difficult for me to provide timely feedback, detailed feedback, frequent feedback, and individualized feedback. It is also much more difficult to assess higher level skills and knowledge (e.g., problem solving, conceptual understanding) when the class size is too large. // Class enrollment size significantly impacts my ability to build relationships with my students. When I have too many students (more than 40), it is very difficult for me to get to know*

and connect with them, and to ""catch"" them when they stop attending or miss an assignment. When class size is too large, it is very easy for the most vulnerable students (e.g., first generation students) to "fall through the cracks."

- *I think it is very possible to teach originally and engage students in large class sizes. No need to switch to lectures and scantron exams. But UD does need to value this then and set a certain quality of instruction expectation.*
- *I have several thoughts: (A) Increases in class size definitely impact all of the factors you mentioned (pedagogy, learning outcomes, etc.). I believe that it is possible to teach a large-section course well; however, it requires significant training, effort, and quality support. (B) I think that large-section teaching is misunderstood by many faculty at UD; if they haven't had the experience themselves, they do not understand the challenges or effort required. Therefore, the workload credit that is typically given for large sections is far too low. (C) In my department, the workload policy for large sections is not clearly defined. Therefore, some faculty have been given more workload credit than others for the exact same course in the exact same semester with the exact same enrollment. This is seriously problematic and should be addressed immediately. (D) I think that the CBA should be updated to reflect the realities of teaching. The number of preps and the class size affects the instructor's required effort far more than the number of sections taught. Assigning 12.5 percent to every 3-credit class is ridiculous. (E) The university should think very carefully about whether increases in class sizes is in the best interest of our students. The trend toward larger class sizes (without much thought about which courses might present problems) is troubling.*

Discussion of Data and Survey Results

The analysis of the enrollment data from 2016–2021 reveals that increasing enrollments and significantly uneven section sizes are a concerning problem found in most colleges across campus. Even if such increases and variances are not commonplace in every unit or discipline, they nevertheless impact many students each year by compromising the educational experience, diluting opportunities for engaged learning and faculty interaction (especially for students from underprivileged backgrounds), and producing inconsistent learning within student cohorts. Faculty who are affected by increasing enrollments or who teach significantly larger sections of the same course while receiving equal workload are vulnerable to a system that lacks clear policies for balancing faculty workload and maintaining equity.

The Faculty Survey on Class Sizes and Enrollment and Chairs Survey provide comprehensive measures of faculty and administrator experiences and perspectives on this topic. The data strongly support the following conclusions:

Increasing class sizes impacts teaching and learning by generally decreasing practices related to student-centered teaching and learning and increasing lecture-based instruction. Faculty are more likely to decrease the depth of course content than to revise curricular scope (learning objectives) and breadth of course content. However, faculty whose class sizes have experienced growth do redesign elements of their courses more frequently than anticipated by faculty who have not yet experienced increased class sizes. Taken together, the data suggests the need for periodic review of classes with large enrollments with respect to instructor support, faculty development and training, learning objectives, and course content. Although the committee acknowledges the necessity of large-enrollment courses in every college, UD students rightly expect the same high quality education and learning opportunities from these courses as they receive in smaller classes, and it is imperative that departmental faculty and administrators work together to ensure that large enrollment courses achieve high pedagogical standards.

Most survey responses indicate that workload and P&T documents do not distinguish between small- and large-enrollment classes. This data is consistent with the findings of the policy subcommittee (see Appendix 6), which found that most units do not reference class size in their workload, merit, or P&T documents. While some unit administrators cite informal or unwritten policies, the importance of developing consistent, equitable department-level policies about workload of small and large classes is evident across the data sets collected by the committee. Because each college and unit is different, units should be encouraged to develop policies that best serve their faculty and students by creating equitable workload assignments and supporting effective teaching and learning in both small- and large-enrollment classes.

With regard to large-enrollment classes and classes with significantly increasing enrollments (either year-to-year or over multiple years), faculty need appropriate support, both in terms of workload recognition and TA support, in order to have the resources to implement student-centered teaching and learning practices. Without this support in place, faculty whose courses increase significantly in enrollment will not likely have the time to reconsider course learning objectives, to redesign course components, and to develop new methods of teaching in order to maintain the breadth, depth, and quality of student learning outcomes. Moreover, decreases in student-centered learning are exacerbated when large classes are assigned with greater frequency to temporary, adjunct, and CT faculty. Faculty who teach several large courses with multiple preps

each semester simply do not have the daylight hours available to develop and deploy best practices in these contexts. When higher percentages of larger and large-enrollment classes are assigned to CT and temporary faculty, as both the enrollment data and faculty survey results show, there is a compounding decrease in the resources these faculty have to redesign their courses and develop new teaching strategies.

So long as departmental policies do not acknowledge the workload demands of large-enrollment sections, large classes will not be perceived as a valuable part of the faculty's teaching dossier, thereby lessening the motivation of faculty to engage in potentially time-intensive course redesign and employ best practices. When TA-support for large-enrollment courses fluctuates in availability or consistency, faculty may have no option but to remove high-impact components of the course that depend on reliable TA support.

Conclusions and Policy Recommendations

This report has revealed what is at stake when considering instances of increasing class sizes, enrollment caps, grossly uneven section sizes, and a lack of policy documents addressing these issues. At stake, first and foremost, are UD students who depend on large courses to fulfill degree requirements that will impact their professional viability and expand their educational breadth. In particular, students whose academic success is jeopardized by various factors may be more likely to disengage, withdraw, or fail in large classes (Beattie and Thiele 2016, Diette and Raghav 2015, Kara, Tonin, and Vlassopoulos 2021). Research at UD and many other institutions points to the same conclusions reflected in the faculty survey: when class sizes increase significantly, many faculty are unable to sustain the student-centered, high-impact pedagogical approaches used in smaller classes. Lacking additional resources, faculty development, administrative and teaching support, and appropriate workload recognition, such increases in class size are likely to directly impact the quality of student learning wherever they occur.

Also at stake are members of the UD faculty who are particularly vulnerable to increases in class size. Lacking consistent and reasonable protections or recognition in workload documents, faculty with heavy teaching workloads, including continuing track, temporary, and some junior tenure-track faculty may find themselves unable to maintain a healthy and sustainable balance between impactful teaching, research expectations (an imperative for almost all tenure-track and tenured faculty, and some continuing track faculty, regardless of workload), and personal health and wellness.

Ultimately, the significant inequities in faculty teaching workloads caused by the lack of clear, consistent policies pertaining to class size and enrollment are antithetical to a supportive, inclusive, and equitable campus environment in which all faculty can thrive. As UD faculty and administrators continue to imagine the sustainable and boundless campus community of the future, the committee encourages everyone invested in this strategic vision to create a foundation today that equitably acknowledges, values, and supports the teaching effort of all UD faculty, regardless of rank and seniority. The conclusions and policy recommendations offered below provide some specific steps toward addressing the problems documented in this report.

(1) Promoting Student Access and Success

Conclusion: Expanding student access and success is a strategic priority of the entire university community. Large and increasing class sizes can negatively impact student success in general, and in particular can jeopardize the success of students from underrepresented, minority communities as well as first-generation students.

Recommendation: The committee stresses the need both for ongoing, realistic assessment of the negative impact on students when class sizes experience significant growth. The committee recommends that CTAL increase the support it provides for faculty assigned to teach large classes and make available resources and best pedagogical practices for teaching large courses. Finally, the committee recommends that curriculum committees work closely with faculty assigned to teach large courses to set learning goals appropriate to the class size in order to maximize depth of learning and student impact.

(2) Periodic Course and Curriculum Review

Conclusion: Compounding fluctuations in class size that occur over time can impact how current students achieve the original curricular objectives and learning goals.

Recommendation: Curriculum committees should periodically revisit the learning goals and curricular scope of large classes. For courses required by majors, curriculum committees can recommend changes to enrollment size to support student success within the major. For GenEd courses, learning goals and course offerings should be updated periodically to reflect the pedagogical priorities of the unit and institution (e.g. updating courses to support new GenEd objectives, increasing diversity and inclusion). Chairs and directors should work closely with

curriculum committees and deans to strategize how best to deploy resources to support impactful teaching and learning. Chairs and directors play a critical role in identifying cases in which class size is misaligned with educational priorities and securing support from the college to make strategic scheduling changes to support student learning.

(3) Equity in Policy Documents

Conclusion: Policies regarding teaching within workload documents vary widely, lack consistency, and often do not address class size and other issues related to teaching workload (e.g., TA support, new course preps).

Recommendation: Provost and Deans should facilitate a process by which chairs and directors share workload documents, identify best practices, and develop strategies to support workload equity when making teaching assignments and evaluating teaching effort.

(4) Flexibility and Transparency of Policy Documents

Conclusion: Each department has unique courses and curricula. For example, courses may include labs, creative and performance activities, clinical or field placements, and/or community-based teaching and learning. Some curricula include requirements set by accrediting agencies or state boards.

Recommendation: Due to the variety of courses and teaching activities across campus, the committee does not recommend a one-size-fits-all workload policy. Faculty within departments and schools should have the flexibility to adapt best practices to their needs. However, the committee recommends that workload documents be transparent and available within and between departments in order to share best practices and promote equity and understanding. The committee also recommends that chairs and directors receive training regarding the implementation of workload policy documents.

(5) Holistic Considerations about Workload

Conclusion: Despite a general lack of specific guidelines in policy documents, many chairs are aware of equity issues that extend beyond teaching to the other workload activities. Chairs are thinking about equity holistically, taking into account factors other than teaching load, class size, etc.

Recommendation: Chairs' work and sensitivity to issues affecting teaching workload should be recognized and supported by Deans. Reviews of chairs by their Dean should include discussion of how chairs are holistically approaching the issue of workload equity within their units. Chairs should be encouraged to implement workload policies such that faculty can adjust workload percentages according to teaching assignments and research expectations. Faculty who are assigned new course preparations, unpaid overloads or add-on sections, field assignments and course-related travel, significant advising (theses, dissertations), and related increases to their actual teaching workloads should have this additional labor reflected in workload percentages and/or decreased research expectations.

(6) Transparency Regarding External Pressures on Class Size

Conclusion: Pressures external to the chair/unit (e.g., availability of teaching space, upper administrators such as deans or the Registrar, needs created by curricular and GenEd requirements) can influence teaching assignments and class sizes.

Recommendation: External pressures need to be made visible and shared with faculty so that faculty can be part of the solution rather than the passive recipients of the consequences of the solutions. The committee recommends that chairs receive training that addresses the shared responsibility of units to meet curricular requirements as well as creative ways of meeting these needs in an equitable manner.

(7) Documenting and Evaluating Teaching Effort

Conclusion: The amount of effort needed to successfully provide a high quality learning experience for students depends on numerous variables in addition to class size, including the level of the class (intro, upper division, graduate), assessment requirements (writing, performing, creating), whether the class is an old, revised, or new preparation, and the quantity and quality of graduate TA support.

Recommendation: The committee recommends that workload documents develop creative, flexible, and actionable guidelines that give appropriate workload credit to faculty whose teaching workload is increased by one or more factors. While acknowledging large and increasing class sizes is an important start to addressing current inequities, these other factors also significantly impact

teaching workload. Factors that workload documents should take into account include new course preparations and course supervision, in which faculty contribute significantly to course design, lesson plans, course materials, assessment tools, and grading.

(8) Increasing and Documenting Graduate TA Support

Conclusion: TA support was the most cited unpublished (informal) teaching practice/policy related to class size or course enrollment. TAs contribute to teaching in different ways that might affect class size. For example, TAs might help a faculty member with grading or leading discussion sections. This type of assistance may reduce the teaching labor for the faculty member and allows for larger classes. (However, the committee notes that supervising and mentoring a TA or team of TAs is an additional responsibility for the faculty member that chairs might not consider.) In other cases, a TA might teach an independent section, which would allow for smaller classes. Several survey responses noted that some departments have abundant TA resources while others have little or none.

Recommendation: Faculty should report in annual appraisal documentation how TAs are utilized to offset workload as well as the additional workload involved in training and mentoring TAs. Annual appraisal webforms should be updated to include input regarding TA contributions, hours, and mentoring. In response, department chairs and school directors should report to their deans about the number and quality of TAs working within their unit, so that Deans can identify and address the need for additional TA funding and support across the college. The committee also recommends that departmental Executive Committees consider reasonable ways in which TA support can be acknowledged and accounted for when calculating faculty teaching workload.

(9) Establish Course Scheduling Guidelines

Conclusion: The committee recognizes that numerous factors influence course scheduling and enrollment caps, including students' curricular needs, changes in program enrollment, faculty availability, and available teaching spaces.

Recommendation: To promote pedagogical consistency and workload equity, the committee recommends that units and course schedulers, wherever possible, distribute students evenly across course sections. Further, all changes to enrollment caps should only occur in consultation with the affected faculty,

curriculum committee, and chair or director. In cases in which uneven sections are unavoidable (e.g., because of limited availability of classrooms), chairs and directors should speak to faculty with large class assignments about the resources required to ensure pedagogical consistency.

(10) Promoting Equity within and between Colleges

Conclusion: When departments reduce the enrollment or number of GenEd offerings, whether due to diminished or reallocated teaching workload or other factors, there is an increase in students who will attempt to meet their GenEd requirements in other departments.

Recommendation: Chairs and directors should discuss significant *reductions* in enrollment caps with their Deans. Deans should identify the demand for GenEd courses within their college, study the way this demand is met across schools and departments, and work with chairs and directors to mitigate significant fluctuations in GenEd offerings. Likewise, Deans should periodically consult with one another and with the Faculty Senate General Education committee to better understand the distribution of GenEd courses across colleges and the corresponding demand these courses make on college faculty.

Appendices

Appendix 1 CT Caucus Resolution

RESOLUTION: Creating an Ad Hoc Committee to Review Class Sizes and Enrollment Caps

(Cosponsored by Senators John Cohill, Heather Doty, Vickie Fedele, Carla Guerrón Montero, Amy Hagstrom, Arild Hestvik, Pia Inguito, Rusty Lee, Bill Lewis, Ryan Moore, John Morgan, Jim Morrison, Victor Perez, Leslie Reidel, and Jonathan Russ)

WHEREAS, increasing course enrollment caps and student enrollments beyond the published course enrollment caps has become a recurring problem, exacerbated by the coronavirus pandemic, and

WHEREAS, increasing class sizes can adversely affect educational excellence, student learning, and course delivery, and

WHEREAS, increased class sizes can increase inequities for both students and faculty within and across departments, and

WHEREAS, upper limits on class sizes are not explicitly considered in the Faculty Handbook, and

WHEREAS, neither departmental bylaws nor departmental workload documents clearly and consistently address class sizes, be it therefore

RESOLVED that an ad hoc committee be created to review:

- current departmental policies, documents, and practices across colleges and departments to determine how course enrollments are assessed, and
- changes in and distribution of enrollment caps during the last three years,

and be it further

RESOLVED that this ad hoc committee should be comprised of volunteers selected by Committee on Committees and Nominations (COCAN), and be composed of both Continuing Track faculty and Tenure Track faculty from multiple colleges and representatives of the Student Government Association and Graduate Student Government, and be it further

RESOLVED that this ad hoc committee should be created and should convene before the end of the Spring 2021 semester and report its findings in a public report to the University Faculty Senate by the end of the Fall 2021 semester, and be it further

RESOLVED that this ad hoc committee be charged with developing actionable items for consideration by the full University Faculty Senate.

Appendix 2 CT Caucus Memo on Resolution

MEMO ON RESOLUTION: AD HOC COMMITTEE ON REVIEWING CLASS SIZES AND ENROLLMENT CAPS

Dear Faculty Senate Voting Members:

We have received some feedback that the resolution, “Ad Hoc Committee to Review Class Sizes and Enrollment Caps” is somewhat vague. Thus, this memo seeks to clarify the motivation for the resolution and provide specific examples and suggestions. The vote on this resolution will take place on Monday, April 5.

- **Class sizes and enrollment caps were an ongoing issue prior to the coronavirus pandemic. However, the pandemic has exacerbated the problem in some departments. [bold font in original]**
- For example, a number of faculty who responded to a survey in December 2020 stated that their class sizes increased in Fall 2020 and Spring 2021.
- This was not a problem created by the Registrar’s Office; rather, departments increased class sizes for faculty without adjusting official workloads.
- Anecdotal evidence suggests that the problem happened in two dimensions: the official enrollment caps were increased, and students were manually added to courses beyond official enrollment caps.
- **There are significant discrepancies regarding class sizes and workloads, both within and between departments.**
- A number of faculty have reported that there are discrepancies within their departments for the same course. For instance, faculty are reporting that some have twice (or even 5 times or higher) the number of students as other faculty for the same workload credit for the same course.
- Within colleges, some departments count larger class sizes as 2x the workload credit, while others do not.
- These discrepancies create inequities among faculty which have direct impacts on annual reviews and promotions. In some departments, this is also creating animosity among colleagues.
- This affects both CT and TT faculty.
- **Class size discrepancies are leading to inequitable experiences for our students.**
- Some students are lucky to be placed in small sections, while others are placed in very large sections (of the same course). Students in small sections are able to spend more one-on-one time with the instructor and receive more personalized feedback.

- Although some large courses cannot be avoided at UD, we should not put some students at a disadvantage and others at an advantage for the same course. Students should have equal opportunities for success, especially for core curriculum courses that serve as gateways to majors/minors.
- **One possible solution is to require that each department includes a statement on class sizes in their workload policies.**
- This would encourage departments to think carefully about their class sizes and associated workloads and create a policy that works for their discipline.
- Some departments already have such policies in place.
- The ad hoc committee proposed by the resolution could review existing policies and make recommendations.

Appendix 3 Committee Charge

1. Review current departmental policies, documents, and practices to
 - a. determine whether class size/ course enrollment impacts workload assignments by department chairs (and/or associate deans or directors of units);
 - b. determine whether class size/ course enrollment is a criterion in evaluating faculty teaching contributions as part of the annual review process and for (rank) promotion;
 - c. identify example departmental policies that address class size/ course enrollment.
2. Review enrollment caps and actual enrollment data since the 2017 fall semester to identify
 - a. significant changes in enrollment caps and actual enrollments;
 - b. examples of courses where enrollment caps and actual enrollments have increased significantly;
 - c. courses that have sections with significantly different enrollment caps;
3. Identify and give examples of courses where pedagogical delivery, course content, assessment methods, and/or student learning outcomes differ significantly as a result of differences in class size/course enrollment.

Appendix 4 Faculty Survey on Class Size and Enrollment

Below are the report summaries of all quantitative data from the Faculty Survey on Class Sizes and Enrollment.

Out of 1,317 full time and part time faculty (<https://ire.udel.edu/quick-facts/>), 366 responded to the survey. These responses could include multiple responses from a single faculty member, given that some faculty teach both undergraduate and graduate courses.

The survey was first announced by Faculty Senate Administrator Karen Holden on March 8, and the survey closed on Friday, March 18. The survey results are reported in full below, with the exception of the final two free-response questions, which have been summarized in the main report so as to uphold the anonymity of respondents.

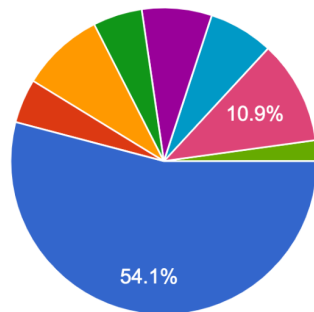
Generally, any roman text included below was part of the survey. Explanatory comments are set entirely in italics.

I. Introduction and Demographic Questions

In late Spring 2021, the Faculty Senate formed the "*Ad Hoc Committee to Review Class Sizes and Enrollment Caps*". The committee's charge is to review current practices and policies regarding class size and upper enrollment limits and to develop actionable items for consideration by the Faculty Senate. Through this survey, the committee invites all UD faculty (including temporary and adjunct faculty) to provide input about changes to class size, impacts on pedagogy, and the role of workload (if any), over the last five academic years.

What is your College (primary appointment)?

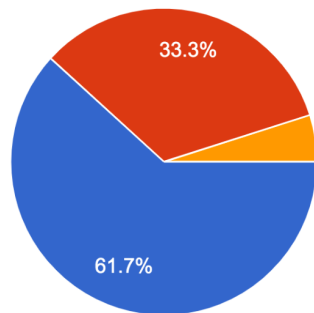
366 responses



- Arts & Sciences
- Agriculture and Natural Resources
- Lerner College of Business & Economics
- Earth, Ocean & Environment
- Education & Human Development
- Engineering
- Health Sciences
- Biden School of Public Policy & Administration

What is your faculty appointment?

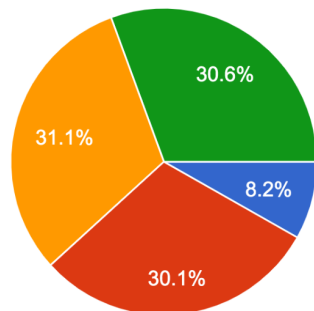
366 responses



- Tenure Track
- Continuing Track
- Temporary

What is your academic rank?

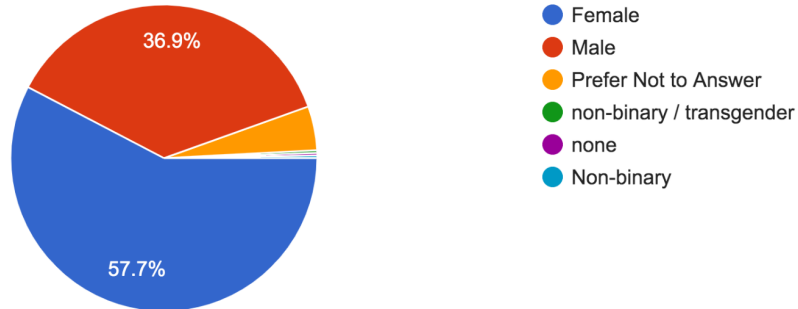
366 responses



- Instructor (including Associate and Senior Instructor)
- Assistant Professor
- Associate Professor
- Professor

What is your gender?

366 responses

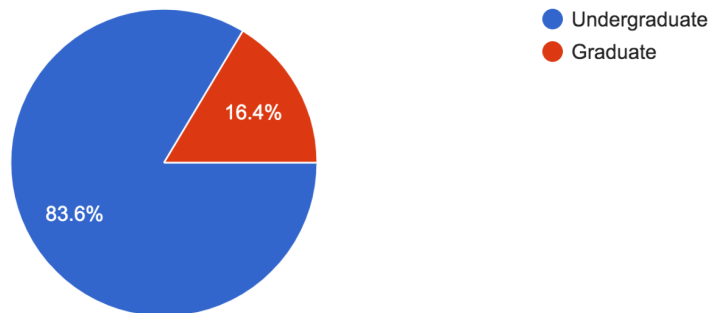


II. Pedagogical Delivery and Learning Outcomes

The next section will ask you questions related to the role of class size on pedagogical delivery and learning outcomes. If you are teaching both undergraduate and graduate classes (or have been teaching in the past five years), please consider filling out the survey twice, once for your undergraduate classes, and once for your graduate classes.

What are your primary teaching responsibilities?

366 responses

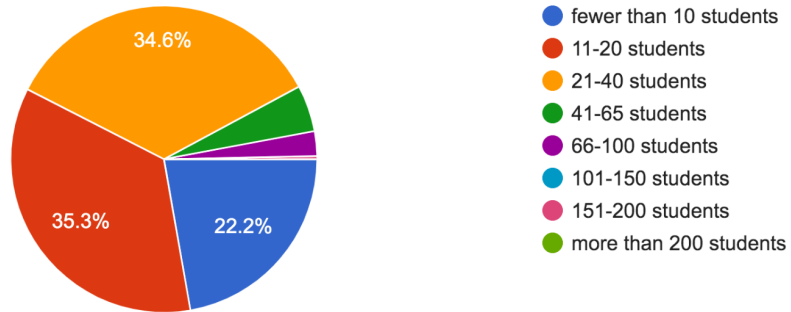


Based on the above response, the survey branched into questions specific to undergraduate and graduate teaching. The survey data reflects 306 responses for undergraduate courses and 60 responses for graduate courses.

Ila. Undergraduate Courses

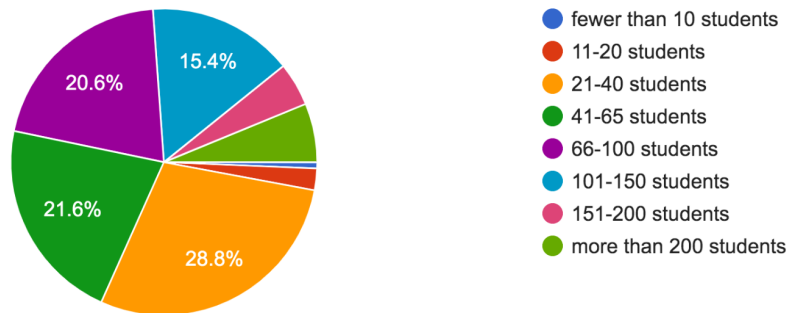
What was the actual enrollment of the **SMALLEST** undergraduate class you taught in the past 5 years?

306 responses



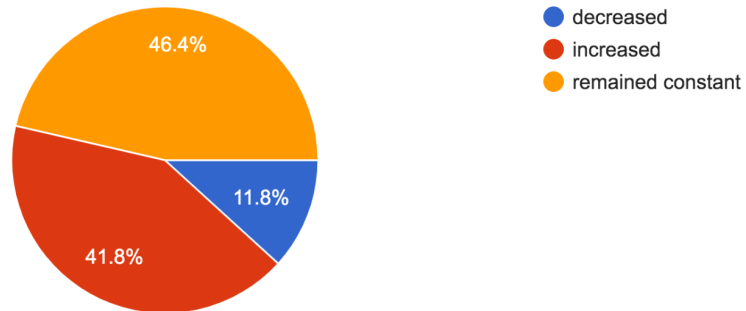
What was the actual enrollment of the **LARGEST** undergraduate class you taught in the past 5 years?

306 responses



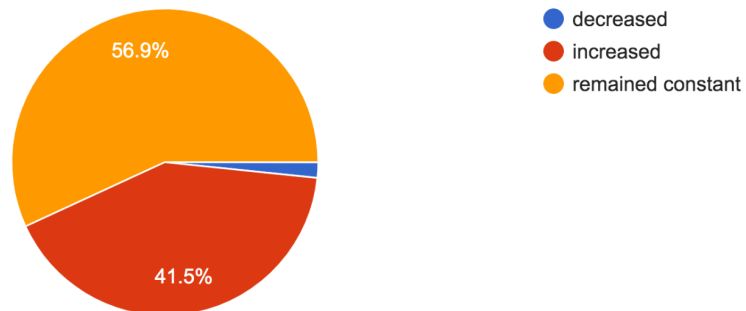
Over the past five years, on average, the **ACTUAL** enrollment in my undergraduate class sections has ____.

306 responses



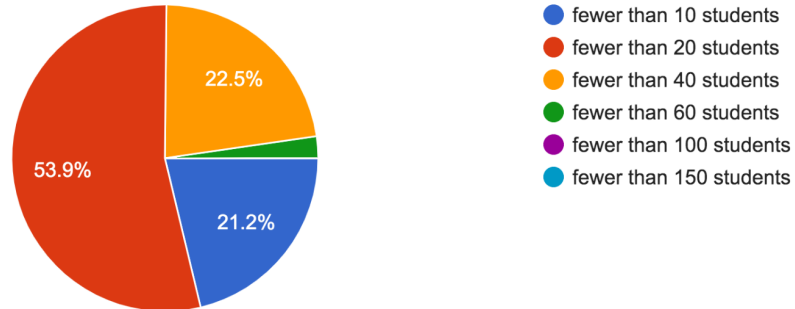
Over the past five years, on average, the **ENROLLMENT CAP** in my undergraduate class sections has ____.

306 responses



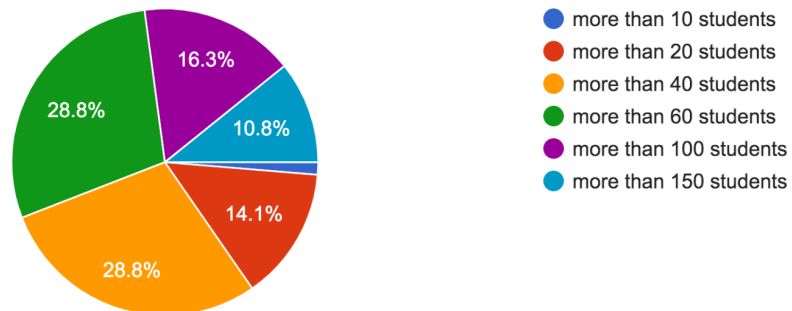
Considering class offerings in your department/college, what is the largest student enrollment that you consider to be a **SMALL CLASS SECTION** at the undergraduate level?

306 responses

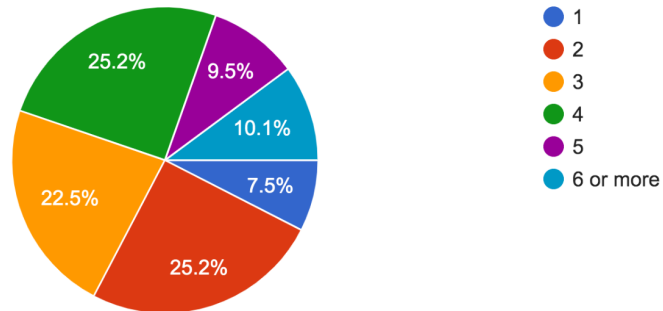


Considering class offerings in your department/college, what is the smallest student enrollment that you consider to be a **LARGE CLASS SECTION** at the undergraduate level?

306 responses



On average, how many course **PREPs** do you have per academic year? (Multiple sections of the same course within a single semester = 1 prep. The ...e course taught in both fall and spring = 2 preps.)
306 responses

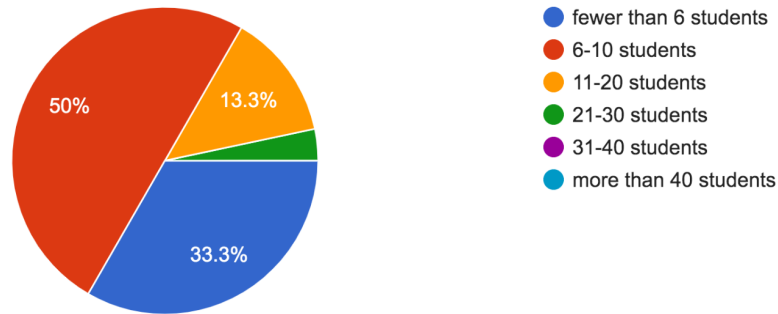


Please note your above definitions of **SMALL** and **LARGE** undergraduate class sections and refer to them when answering the remaining survey questions.

IIb. Graduate Courses

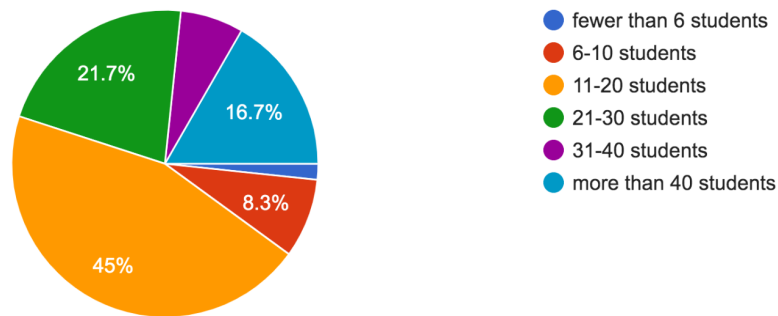
What was the actual enrollment of the **SMALLEST** graduate class you taught in the past 5 years?

60 responses



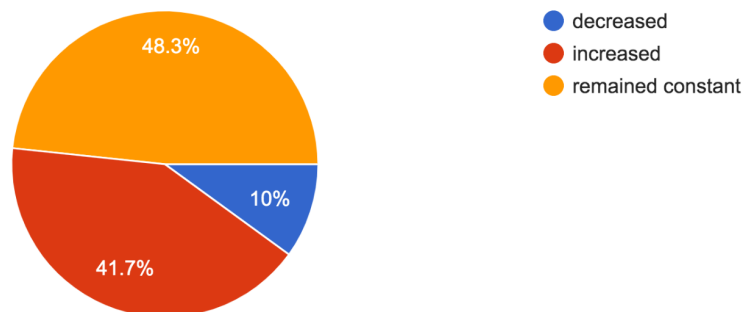
What was the actual enrollment of the **LARGEST** graduate class you taught in the past 5 years?

60 responses



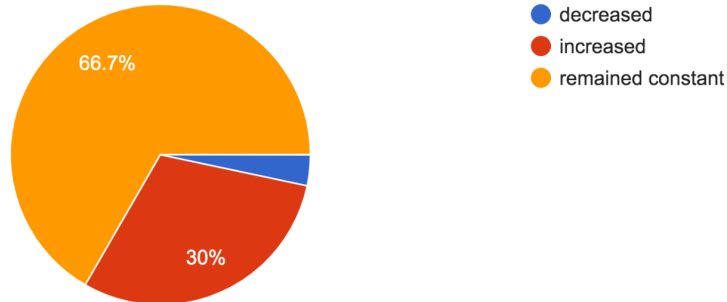
Over the past five years, on average, the **ACTUAL** enrollment in my graduate class sections has

_____.
60 responses



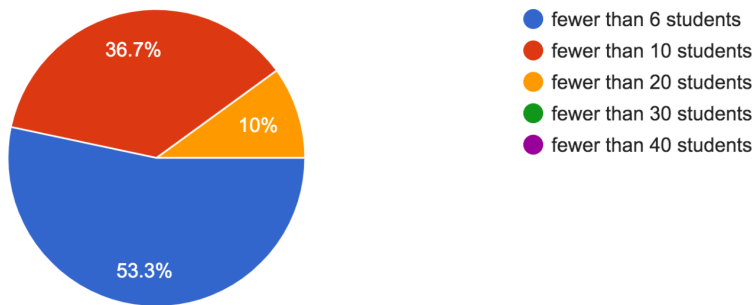
Over the past five years, on average, the **ENROLLMENT CAP** in my graduate class sections has

_____.
60 responses



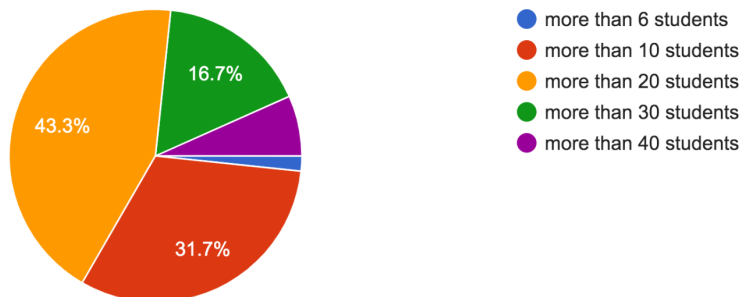
Considering class offerings in your department/college, what is the largest student enrollment that you consider to be a **SMALL CLASS SECTION** at the graduate level?

60 responses

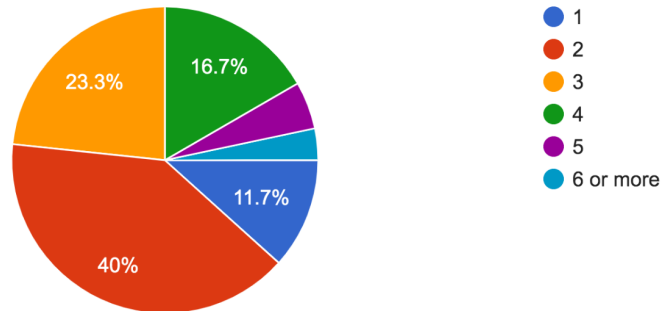


Considering class offerings in your department/college, what is the smallest student enrollment that you consider to be a **LARGE CLASS SECTION** at the graduate level?

60 responses



On average, how many course **PREPs** do you have per academic year? (Multiple sections of the same course within a single semester = 1 prep. The ...e course taught in both fall and spring = 2 preps.)
60 responses

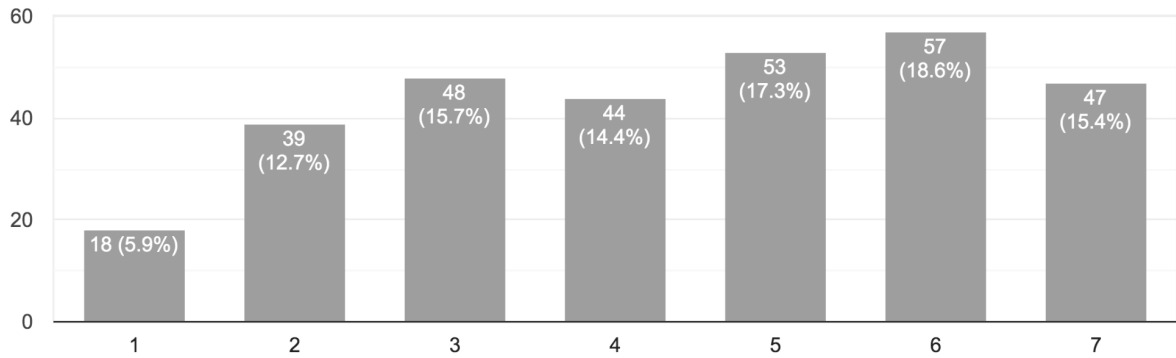


Please note your above definitions of **SMALL** and **LARGE** graduate class sections and refer to them when answering the remaining survey questions.

IIIa. Undergraduate Teaching Effort and Support

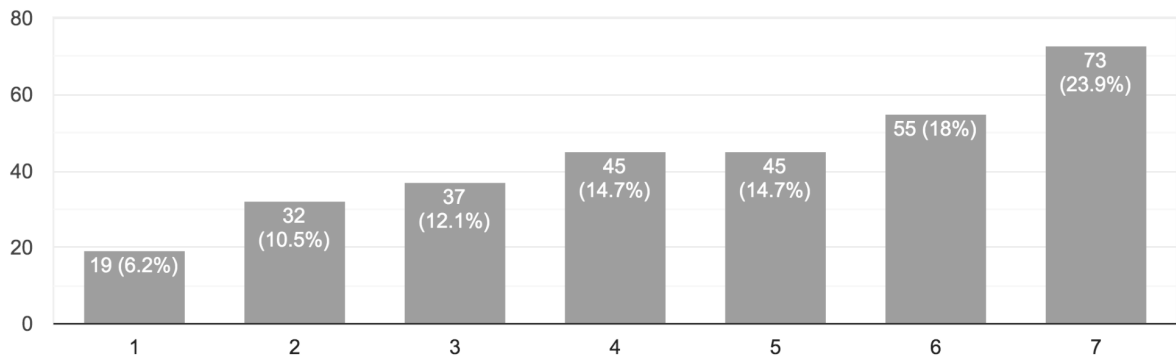
Please rate the following. The actual enrollment in my class sections is appropriate for the learning goals of the course.

306 responses



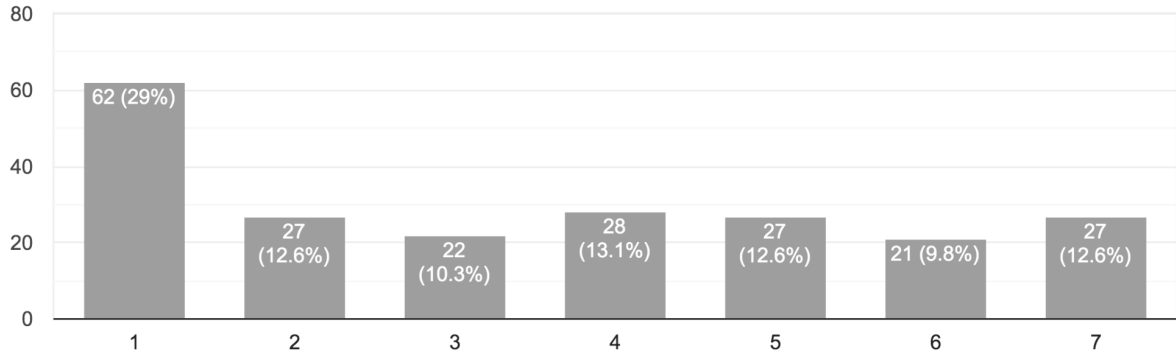
Please rate the following. My teaching effort (as defined above) is directly proportional to the enrollment in my class sections.

306 responses

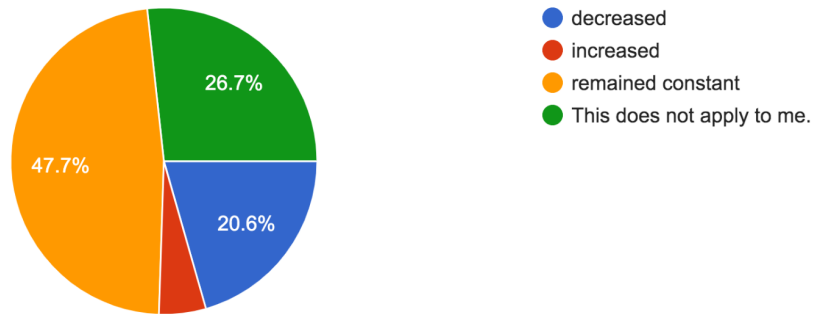


Please answer the following two questions **ONLY IF** you are currently teaching (or have been teaching in the past five years) large-enrollment class sections.

Please rate the following. When teaching large-enrollment sections, I **CURRENTLY** receive adequate (sufficient hours and sufficiently train...or undergraduate TAs) from my department/college.
 214 responses



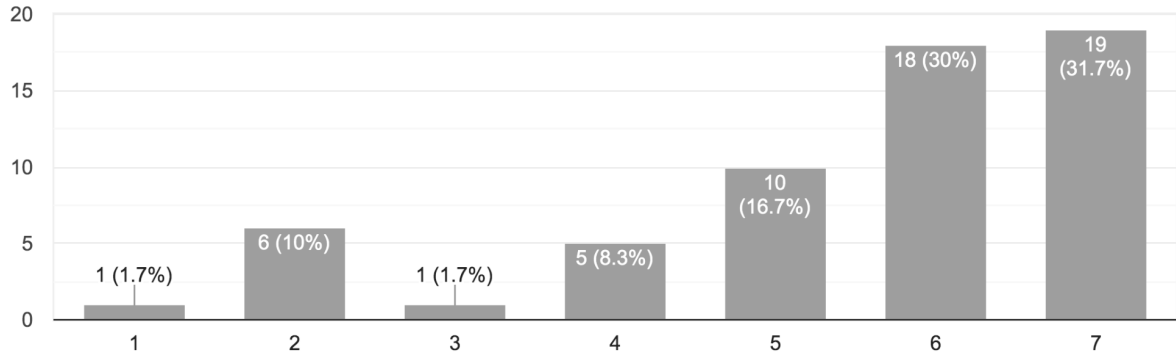
Over the past five years, the TA support (graduate and/or undergraduate) that I have received from my department/college for my large-enrollment class sections has: ____.
 243 responses



IIIb. Graduate Teaching Effort and Support

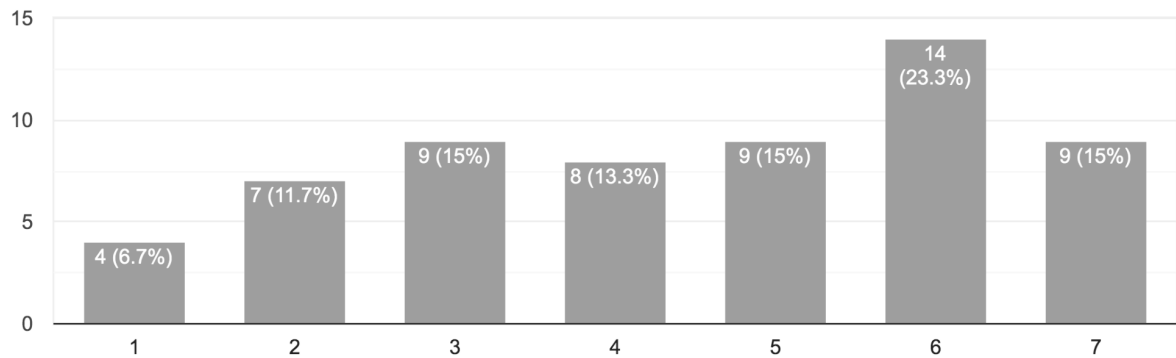
Please rate the following. The actual enrollment in my class sections is appropriate for the learning goals of the course.

60 responses



Please rate the following. My teaching effort (as defined above) is directly proportional to the enrollment in my class sections.

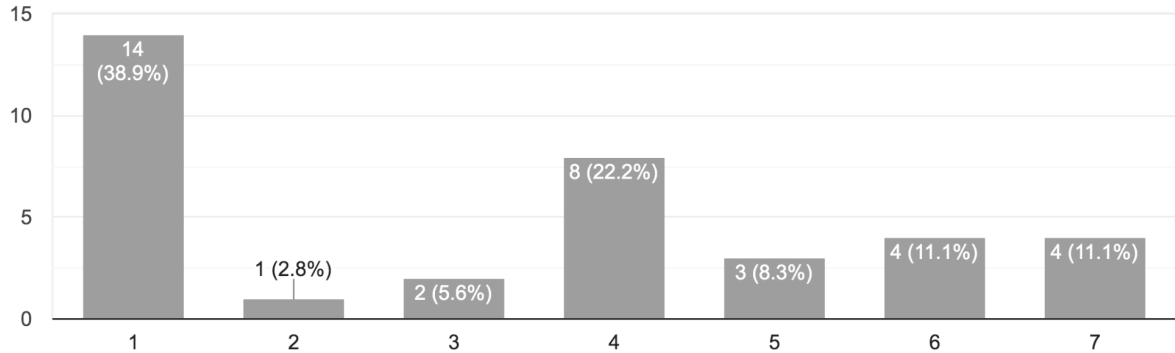
60 responses



Please answer the following two questions **ONLY IF** you are currently teaching (or have been teaching in the past five years) large-enrollment graduate class sections.

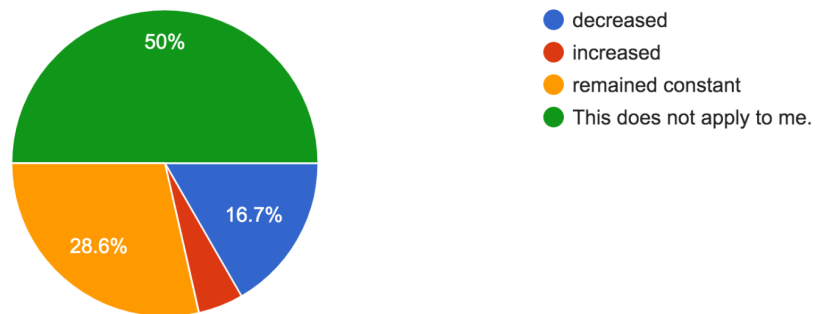
Please rate the following. When teaching large-enrollment sections, I **CURRENTLY** receive adequate (sufficient hours and sufficiently trained) assistant (TA) support from my department/college.

36 responses



Over the past five years, the TA support that I have received from my department/college for my large-enrollment class sections has: ____.

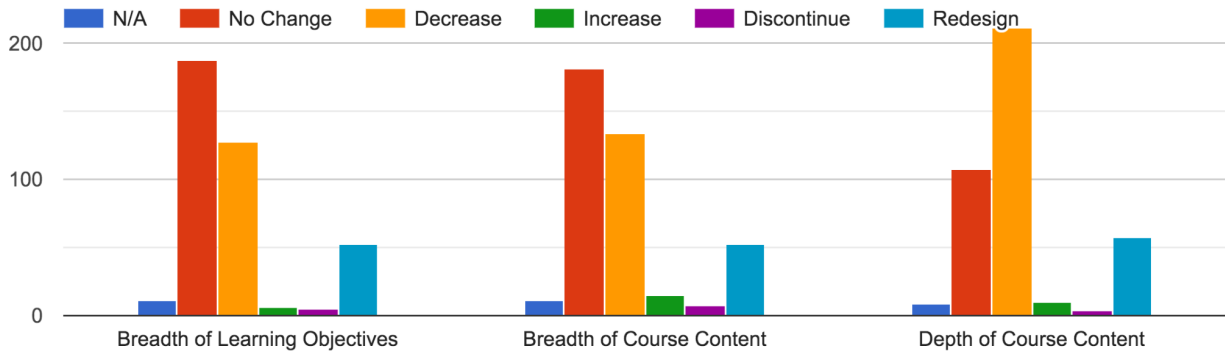
42 responses



IV. Pedagogical Impact

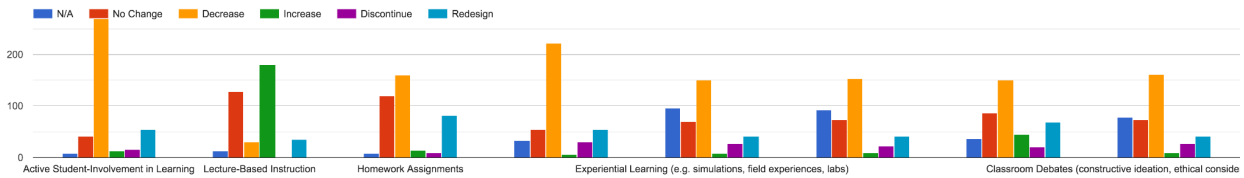
The following question-grids list various pedagogical aspects across rows. For each pedagogical aspect below, please choose one or more column-categories that best describe the impact of significant increases in class size on your classes (If you experienced increases in class size, please characterize the impact on each row-item based on the changes that you made/experienced. If you have not experienced increases in class size, please indicate how you think each row-item would change as a result of increases in class size.)

For each row-item below, please choose one or more column-categories that best describe the **impact of significant increases in class size on the Course Design** of your classes.



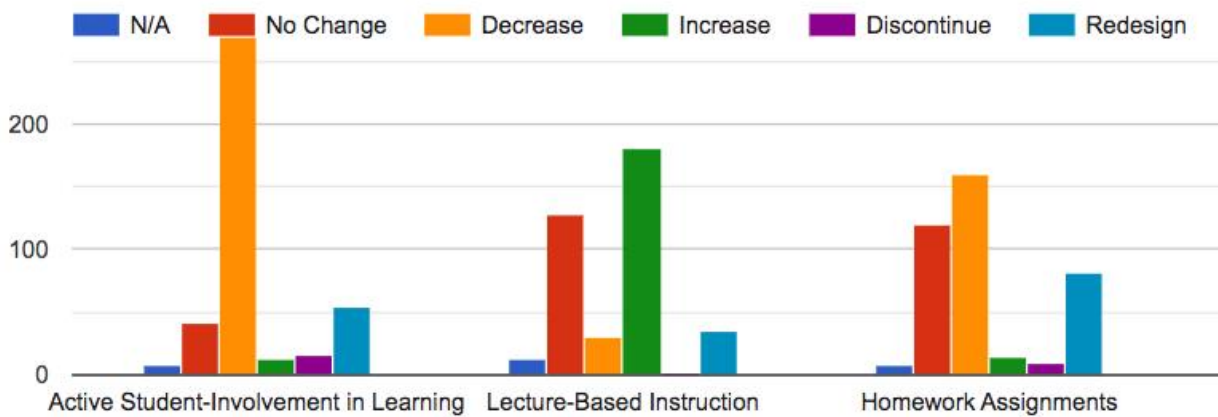
Complete results, with some labels missing (requires document zooming):

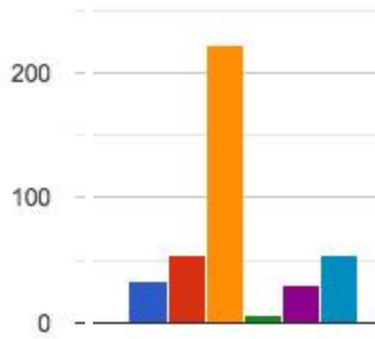
For each row-item below, please choose one or more column-categories that best describe the **impact of significant increases in class size on Student Learning Activities** in your classes.



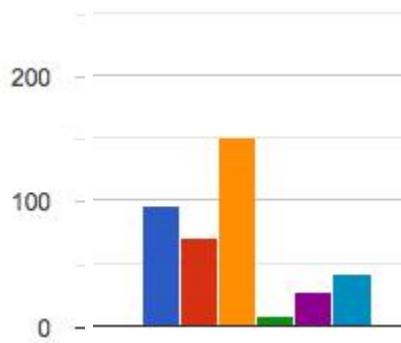
Magnified text, correct labels, and screenshots:

For each row-item below, please choose one or more column-categories that best describe the **impact of significant increases in class size on Student Learning Activities** in your classes.

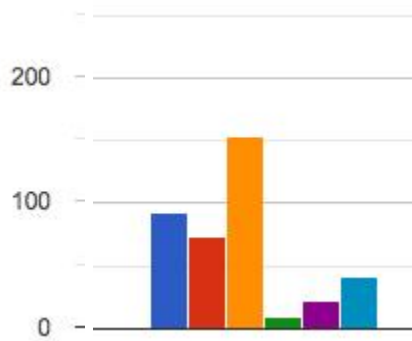




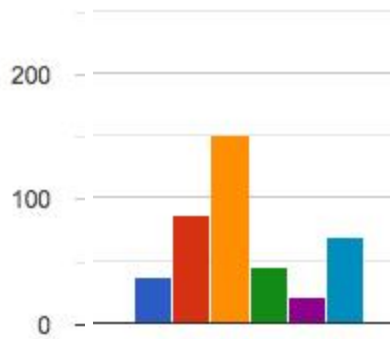
Writing Assignments (e.g. in-class writing prompts, essay-type homework)



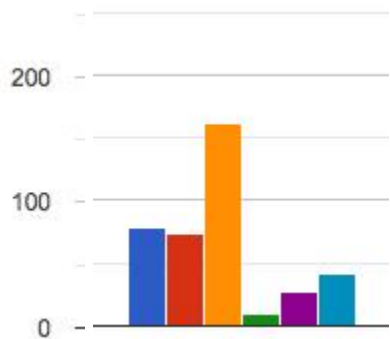
Experiential Learning (e.g. simulations, field experiences, labs)



Hands-On Learning (e.g. lab, simulations)



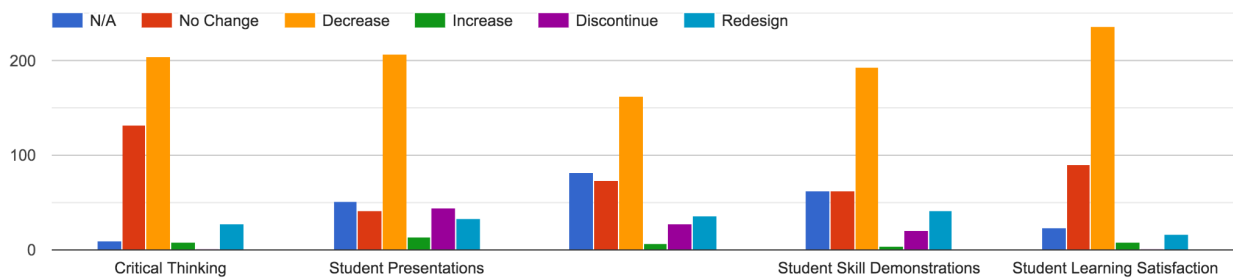
Interactive Learning (e.g. group projects, team-based learning, peer instruction)



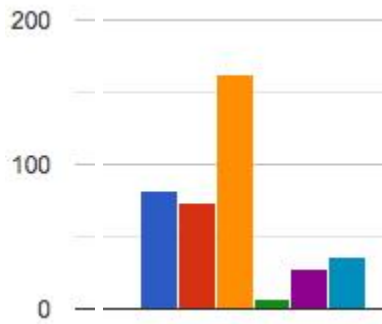
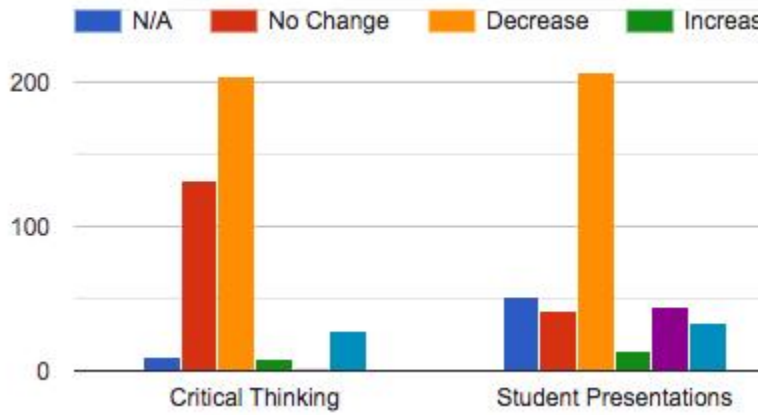
Classroom Debates (constructive ideation, ethical considerations, critical thinking)

Complete results, with some labels missing (requires document zooming):

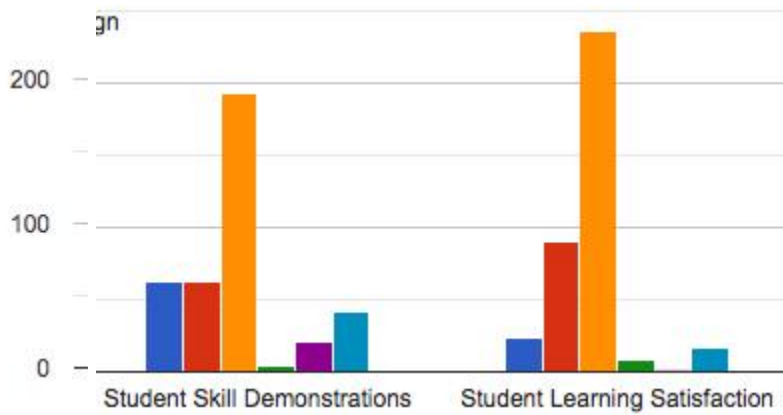
For each row-item below, please choose one or more column-categories that best describe the **impact of significant increases in class size on Student Outcomes** (research, presentation, paper) in your classes.



Magnified text, correct labels, and screenshots:

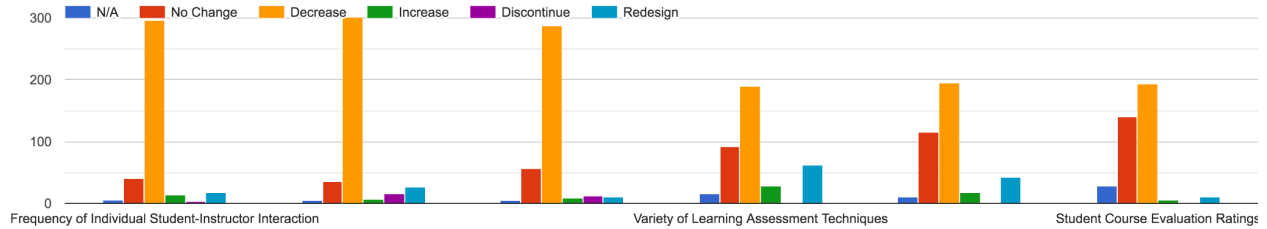


Student Research (e.g. lab project, term paper)



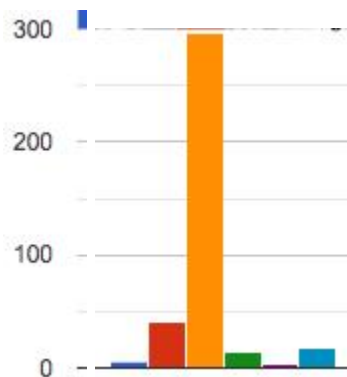
Complete results, with some labels missing (requires document zooming):

For each row-item below, please choose one or more column-categories that best describe the **impact of significant increases in class size on Faculty-Student Interactions and Assessment** in your classes.

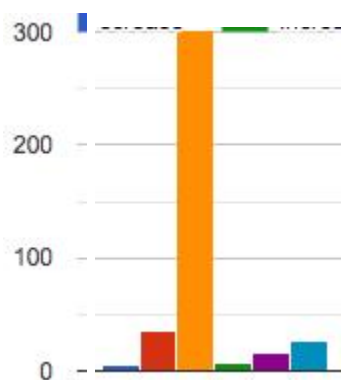


Magnified text, correct labels, and screenshots:

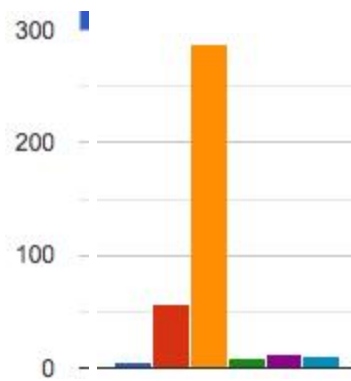
For each row-item below, please choose one or more column-categories that best describe the **impact of significant increases in class size on Faculty-Student Interactions and Assessment** in your classes.



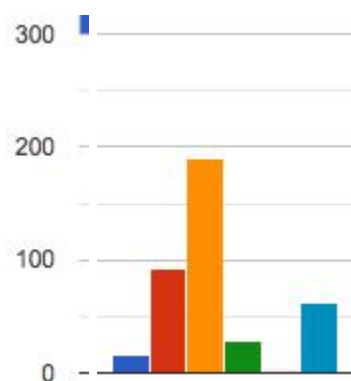
Frequency of Individual Student-Instructor Interaction



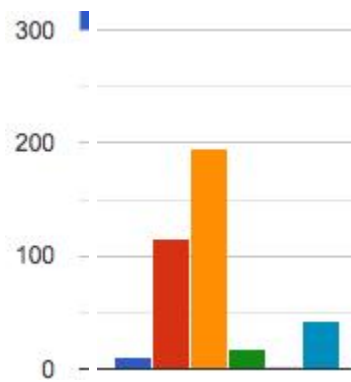
Personalized Feedback to Students (Frequency, Depth)



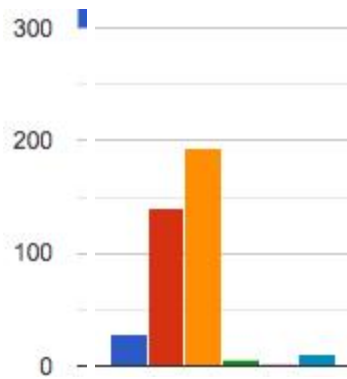
Rapport with Students (e.g. learning students' names, providing student recommendations)



Variety of Learning Assessment Techniques



Frequency of Learning Assessment

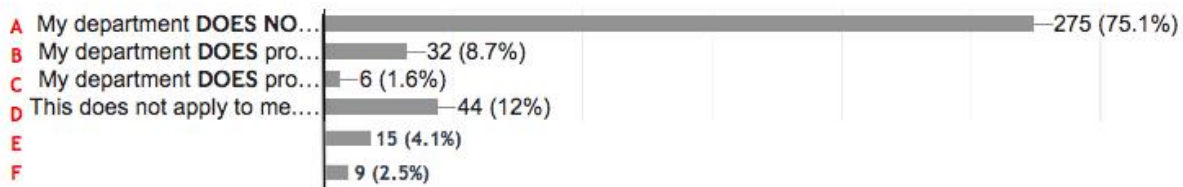


Student Course Evaluation Ratings

V. Teaching Workload

Does your department address large-enrollment sections in your workload for annual review purposes? (Check all that apply)

366 responses



A: My department **DOES NOT** differentiate between small and large sections in terms of annual teaching workload.

B: My department **DOES** provide greater workload credit for large sections.

C: My department **DOES** provide financial compensation (e.g. S-contract) for enrollments above a certain threshold.

D: This does not apply to me. (For instance, my field does not allow for large sections.)

E: Free response: I don't know/I'm unsure

F: Other free responses.

Summary of other free responses:

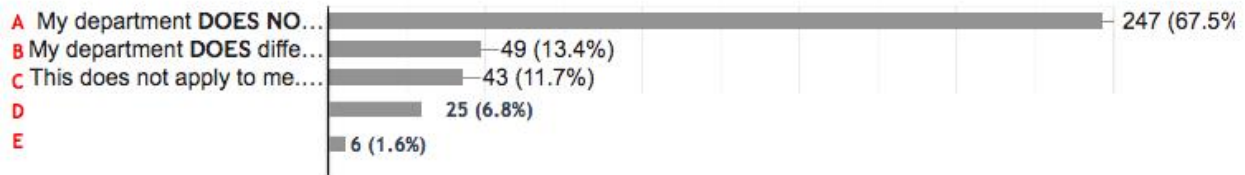
2 responses indicated writing and lecture should be distinguished. Individual comments were given regarding merit points,

- Departments should distinguish between writing and lecture courses [2 responses]
- Merit points are a problem.
- No concern to me given small class sizes
- Department addresses large enrollments only for some faculty
- Small merit points received at annual evaluation for large enrollment classes

- Additional s-contract funds offered above thresholds only in summer/winter
- Some departments have classes with heavy student advisement, which necessitates smaller class sizes.

Does your department take into account large-enrollment sections for P&T (and peer review) purposes? (Check all that apply)

366 responses



- A:** My department **DOES NOT** differentiate between small and large sections for P&T
B: My department **DOES** differentiate between small and large sections for P&T
C: This does not apply to me. (For instance, my field does not allow for large sections.)
D: Free response: I don't know/I'm unsure
E: Other free responses.

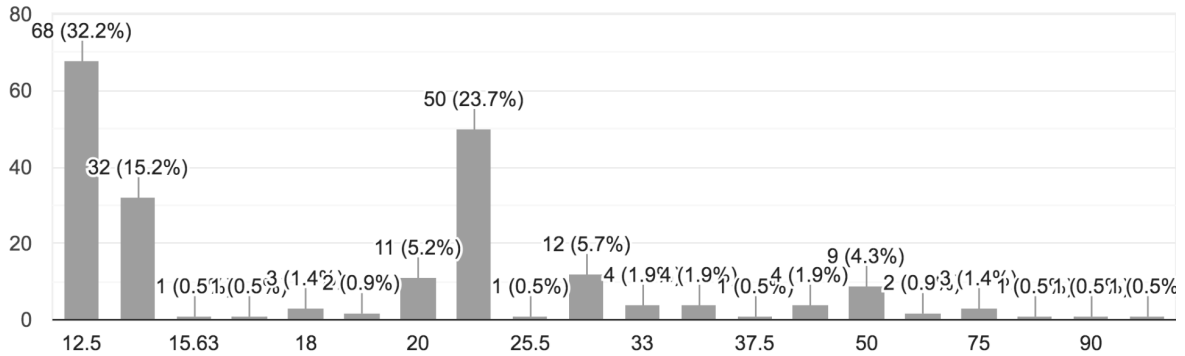
Summary of other free responses:

- Class type (lecture vs. writing) as important as class size
- Some departments devalue large sections in P&T because they are considered introductory and thereby inferior.
- No formal distinction, but admin and faculty are aware and make note [2 responses]
- Yes, but not noted in peer reviews.

Complete text for following question: What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *introductory class section* (100-level) of **75 undergraduate students**: _____% (If this question does not apply to your field, please

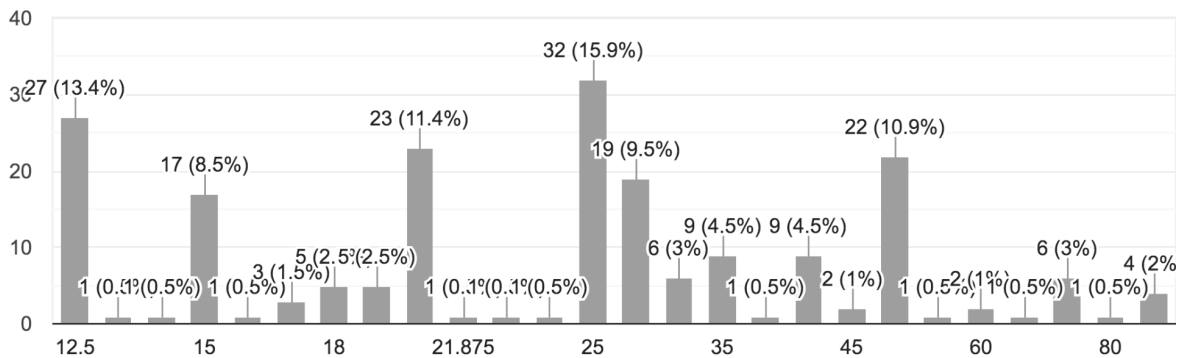
leave this blank.)

What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *introductory class section* (100-level) of ...s question does not apply to your field, please leave this blank.)
211 responses



Complete text for following question: What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *introductory class section* (100-level) of **150 undergraduate students**: _____% (If this question does not apply to your field, please leave this blank.)

What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *introductory class section* (100-level) of ...s question does not apply to your field, please leave this blank.)
201 responses

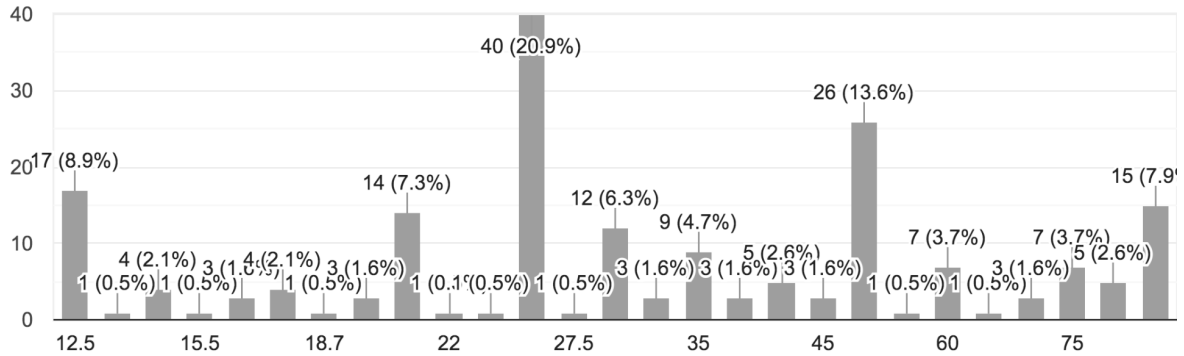


Complete text for following question: What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *introductory class section* (100-level) of **300 undergraduate students**: _____% (If this question does not apply to your field, please

leave this blank.)

What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *introductory class section* (100-level) of ...s question does not apply to your field, please leave this blank.)

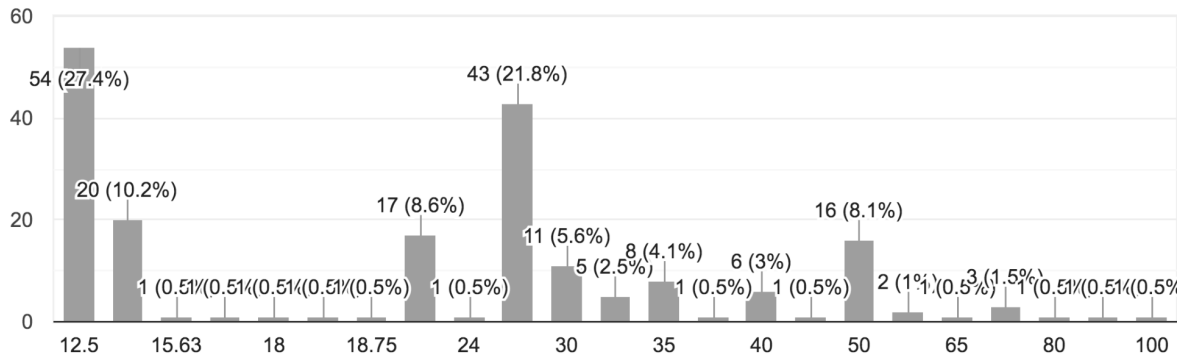
191 responses



Complete text for following question: What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *upper-level class section* (300-400-level) of **75 undergraduate students**: _____% (If this question does not apply to your field, please leave this blank.)

What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *upper-level class section* (300-400-level) ...question does not apply to your field, please leave this blank.)

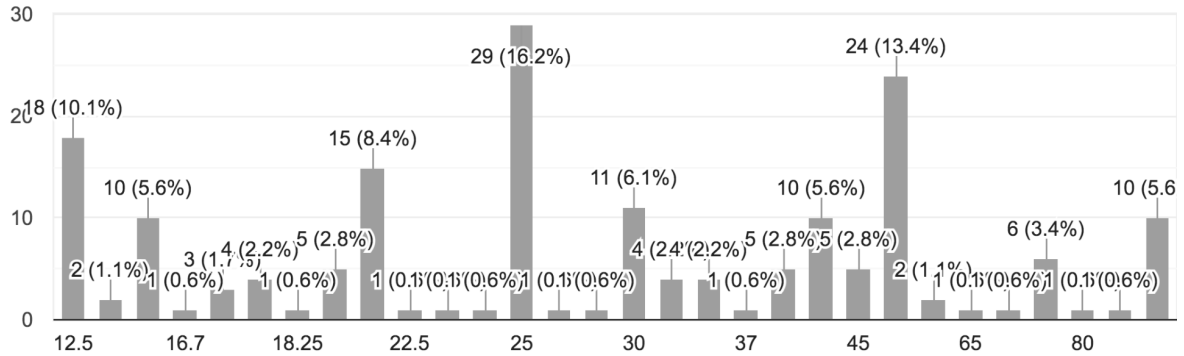
197 responses



Complete text for following question: What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *upper-level class section* (300-400-level) of **150 undergraduate students**: _____% (If this question does not apply to your field,

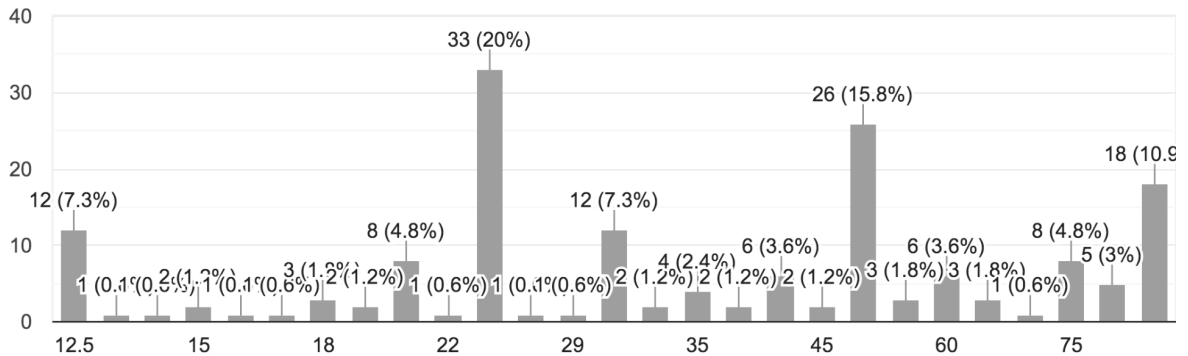
please leave this blank.)

What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *upper-level class section* (300-400-level) ...question does not apply to your field, please leave this blank.)
179 responses



Complete text for following question: What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *upper-level class section* (300-400-level) of **300 undergraduate students**: _____ % (If this question does not apply to your field, please leave this blank.)

What is the minimum teaching workload credit that you would consider appropriate for a 3-credit *upper-level class section* (300-400-level) ...question does not apply to your field, please leave this blank.)
165 responses



Complete text: Please think of an undergraduate class section that you typically teach. Please consider the following scenario: Next semester, you are asked to teach a class section with an enrollment that is double (2x) the number of students usually in that class. What is the minimum annual teaching workload credit that you would consider

appropriate for this larger enrollment class?

Please think of an undergraduate class section that you typically teach. Please consider the following scenario: Next semester, you are asked to...sider appropriate for this larger enrollment class?
366 responses



VI. Comments

Please provide additional comments on how class enrollment size impacts any of the following: pedagogical delivery, learning outcomes, assessment methods, student engagement, student performance, faculty teaching workload, etc.

For a sample of representative comments, please see pages 18–22 of this report.

For any course(s) that you are aware of that are problematic with regard to the topics covered in this survey (increase in class size, pedagogy adjustments due to increased enrollment cap, ...), please enter their course prefix and number (e.g. UNIV123) below:

To ensure the anonymity of respondents, we are not reporting specific courses.

Appendix 5 Faculty Survey Analysis

Undergraduate Courses

“What was the actual enrollment of the SMALLEST undergraduate class you taught in the past 5 years?”

Table PedSur.A: Smallest Undergraduate Enrollment

Smallest Enrollment	Temporary	CT	TT	All
< 10 students	27.78%	19.66%	23.39%	22.22%
11 - 20 students	38.89%	34.19%	35.67%	35.29%
21 - 40 students	27.78%	35.04%	35.09%	34.64%
41 - 65 students	0.00%	7.69%	3.51%	4.90%
66 - 100 students	5.56%	3.42%	1.75%	2.61%
101 - 150 students	0.00%	0.00%	0.00%	0.00%
151 - 200 students	0.00%	0.00%	5.80%	0.33%
> 200 students	0.00%	0.00%	0.00%	0.00%
<i>N</i>	18	117	171	306

Note: Median answer in bold font.

“What was the actual enrollment of the LARGEST undergraduate class you taught in the past 5 years?”

Table PedSur.B: Largest Undergraduate Enrollment

Largest Enrollment	Temporary	CT	TT	All
< 10 students	0.00%	0.00%	1.17%	0.65%
11 - 20 students	11.11%	0.85%	2.34%	2.29%
21 - 40 students	27.78%	28.21%	29.24%	28.76%
41 - 65 students	22.22%	11.97%	28.07%	21.57%
66 - 100 students	11.11%	23.08%	19.88%	20.59%
101 - 150 students	27.78%	23.08%	8.77%	15.36%
151 - 200 students	0.00%	5.13%	4.68%	4.58%
> 200 students	0.00%	7.69%	5.85%	6.21%
<i>N</i>	18	117	171	306

Notes: Median answer in bold font. On average, the reported undergraduate class size of CT faculty is significantly higher than that of TT faculty (Wilcoxon rank sum test, $p < 0.01$; Kruskal-Wallis test, $p = 0.01$).

“Considering class offerings in your department/college, what is the largest student enrollment that you consider to be a SMALL CLASS SECTION at the undergraduate level?”

Table PedSur.C: Definition of Small Undergraduate Section

Small Definition	Temporary	CT	TT	All
< 10 students	22.22%	11.97%	27.49%	21.24%
< 20 students	55.56%	52.14%	54.97%	53.92%
< 40 students	22.22%	30.77%	16.96%	22.55%
< 60 students	0.00%	5.13%	0.58%	2.29%
< 100 students	0.00%	0.00%	0.00%	0.00%
< 150 students	0.00%	0.00%	0.00%	0.00%
<i>N</i>	18	117	171	306

Notes: Median answer in bold font. On average, the definition of a small undergraduate section by TT faculty is significantly smaller than by CT faculty (Wilcoxon rank sum test, $p < 0.01$; Kruskal-Wallis test, $p < 0.01$).

“Considering class offerings in your department/college, what is the smallest student enrollment that you consider to be a LARGE CLASS SECTION at the undergraduate level?”

Table PedSur.D: Definition of Large Undergraduate Section

Large Definition	Temporary	CT	TT	All
> 10 students	0.00%	1.71%	1.17%	1.31%
> 20 students	33.33%	13.68%	12.28%	14.05%
> 40 students	22.22%	26.50%	30.99%	28.76%
> 60 students	33.33%	28.21%	28.65%	28.76%
> 100 students	5.56%	23.08%	12.87%	16.34%
> 150 students	5.56%	6.84%	14.04%	10.78%
<i>N</i>	18	117	171	306

Note: Median answer in bold font.

“On average, how many course Preps do you have per academic year? (Multiple sections of the same course within a single semester = 1 prep. The same course taught in both fall and spring = 2 preps.)”

Table PedSur.E: Number of Course Preps per Academic Year

No. of Preps	Temporary	CT	TT	All
1	11.11%	2.56%	10.53%	7.52%
2	22.22%	21.37%	28.07%	25.16%
3	5.56%	26.50%	21.64%	22.55%
4	16.67%	22.22%	28.07%	25.16%
5	11.11%	10.26%	8.77%	9.48%
6 or more	33.33%	17.09%	2.92%	10.13%

No. of Preps	Temporary	CT	TT	All
1	11.11%	2.56%	10.53%	7.52%
Mean	3.94	3.68	3.05	3.34
N	18	117	171	306

Notes: Median answer in bold font. On average, CT faculty report a significantly larger number of preps per academic year than TT faculty (Wilcoxon rank sum test, $p < 0.01$; Kruskal-Wallis test, $p < 0.01$). On average, temporary faculty report a significantly larger number of preps per academic year than TT faculty (Wilcoxon rank sum test, $p = 0.04$; Kruskal-Wallis test, $p = 0.04$).

Graduate Courses

“What was the actual enrollment of the SMALLEST graduate class you taught in the past 5 years?”

Table PedSur.F: Smallest Graduate Enrollment

Smallest Enrollment	CT	TT	All
< 6 students	20.00%	34.55%	33.33%
6 - 10 students	80.00%	47.27%	50.00%
11 - 20 students	0.00%	14.55%	13.33%
21 - 30 students	0.00%	3.64%	3.33%
31 - 40 students	0.00%	0.00%	0.00%
> 40 students	0.00%	0.00%	0.00%
N	5	55	60

Note: Median answer in bold font.

“What was the actual enrollment of the LARGEST graduate class you taught in the past 5 years?”

Table PedSur.G: Largest Graduate Enrollment

Largest Enrollment	CT	TT	All
< 6 students	0.00%	1.82%	1.67%
6 - 10 students	0.00%	9.09%	8.33%
11 - 20 students	60.00%	43.64%	45.00%
21 - 30 students	20.00%	21.82%	21.67%
31 - 40 students	20.00%	7.27%	6.67%
> 40 students	0.00%	16.36%	16.67%
N	5	55	60

Note: Median answer in bold font.

“Considering class offerings in your department/college, what is the largest student enrollment that you consider to be a SMALL CLASS SECTION at the graduate level?”

Table PedSur.H: Definition of Small Graduate Class

Small Definition	CT	TT	All
< 6 students	60.00%	52.73%	53.33%
< 10 students	20.00%	38.18%	36.67%
< 20 students	20.00%	9.09%	10.00%
< 30 students	0.00%	0.00%	0.00%
< 40 students	0.00%	0.00%	0.00%
<i>N</i>	5	55	60

Note: Median answer in bold font.

“Considering class offerings in your department/college, what is the largest student enrollment that you consider to be a LARGE CLASS SECTION at the graduate level?”

Table PedSur.I: Definition of Large Graduate Class

Large Definition	CT	TT	All
> 6 students	0.00%	1.82%	1.67%
> 10 students	40.00%	30.91%	31.67%
> 20 students	20.00%	45.45%	43.33%
> 30 students	40.00%	14.55%	16.67%
> 40 students	0.00%	7.27%	6.67%
<i>N</i>	5	55	60

Note: Median answer in bold font.

“On average, how many course Preps do you have per academic year? (Multiple sections of the same course within a single semester = 1 prep. The same course taught in both fall and spring = 2 preps.)”

Table PedSur.J: Number of Course Preps per Academic Year

No. of Preps	CT	TT	All
1	0.00%	12.73%	11.67%
2	0.00%	43.64%	40.00%
3	40.00%	21.82%	23.33%
4	20.00%	16.36%	16.67%
5	20.00%	3.64%	5.00%
6 or more	20.00%	1.82%	3.33%
Mean	4.2	2.6	2.73
<i>N</i>	5	55	60

Note: Median answer in bold font.

Teaching Effort and Support

“The actual enrollment in my class sections is appropriate for the learning goals of the course.”

Undergraduate Courses

Table PedSur.K: Appropriate Enrollment for Undergraduate Classes

	Change in Size		Large Section		Appointment			All
	Const.	Inc.	< 66	>= 66	Temp.	CT	TT	
1: Str. Disagree	4.93%	8.59%	3.07%	9.09%	0.00%	8.55%	4.68%	5.88%
2	7.04%	21.88%	9.82%	16.08%	16.67%	19.66%	7.60%	12.75%
3	16.90%	17.97%	13.50%	18.18%	16.67%	16.24%	15.20%	15.69%
4	14.79%	14.84%	12.88%	16.08%	33.33%	11.97%	14.04%	14.38%
5	18.31%	15.62%	17.18%	17.48%	5.56%	11.97%	22.22%	17.32%
6	20.42%	12.50%	23.93%	12.59%	16.67%	20.51%	17.54%	18.63%
7: Str. Agree	17.61%	8.59%	19.63%	10.49%	11.11%	11.11%	18.71%	15.36%
Mean	4.66	3.79¹	4.82	3.97²	4.22	4.05³	4.69	4.42
N	142	128	163	143	18	117	171	306

Notes: Median answer in bold font.

¹ On average, faculty who experienced significant increases in class size agree significantly less than faculty who did not experience significant increases with enrollment being appropriate for the learning goals. (Wilcoxon rank sum test, $p < 0.01$; Kruskal-Wallis test, $p < 0.01$).

² On average, faculty who taught undergraduate sections with 66+ students agree significantly less with actual enrollment being appropriate for the learning goals than faculty who never taught 66+ student classes (Wilcoxon rank sum test, $p < 0.01$; Kruskal-Wallis test, $p < 0.01$).

³ On average, CT faculty agree significantly less than TT faculty that the actual enrollment is appropriate for the learning goals (Wilcoxon rank sum test, $p < 0.01$; Kruskal-Wallis test, $p < 0.01$).

Graduate Courses

Table PedSur.L: Appropriate Enrollment for Graduate Classes

	Change in Size		Appointment		All
	Const.	Inc.	CT	TT	
1: Str. Disagree	0.00%	4.00%	0.00%	1.82%	1.67%
2	3.45%	20.00%	20.00%	9.09%	10.00%
3	0.00%	4.00%	0.00%	1.82%	1.67%
4	10.34%	8.00%	0.00%	9.09%	8.33%
5	20.69%	16.00%	20.00%	16.36%	16.67%
6	31.03%	28.00%	60.00%	27.27%	30.00%
7: Str. Agree	34.48%	20.00%	0.00%	34.55%	31.67%

Mean	5.79	4.76¹	5.00	5.49	5.45
N	29	25	5	55	60

Note: Median answer in bold font.

¹ On average, faculty who experienced significant increases in class size agree significantly less than faculty who did not experience significant increases with enrollment being appropriate for the learning goals. (Wilcoxon rank sum test, $p < 0.10$; Kruskal-Wallis test, $p < 0.10$).

“My teaching effort is directly proportional to the enrollment in my class sections.”

Undergraduate

Table PedSur.M: Effort Proportional to Enrollment in Undergraduate Classes

	Change in Size		Large Section		Appointment			All
	Const.	Inc.	< 66	>= 66	Temp.	CT	TT	
1: Str. Disagree	7.75%	3.12%	5.52%	6.99%	5.56%	4.27%	7.60%	6.21%
2	9.15%	11.72%	11.04%	9.79%	5.56%	6.84%	13.45%	10.46%
3	13.38%	12.50%	8.59%	16.08%	11.11%	12.82%	11.70%	12.09%
4	15.49%	12.50%	16.56%	12.59%	16.67%	14.53%	14.62%	14.71%
5	15.49%	10.16%	14.11%	15.38%	11.11%	17.09%	13.45%	14.71%
6	14.08%	25.00%	18.40%	17.48%	16.67%	19.66%	16.96%	17.97%
7: Str. Agree	24.65%	25.00%	25.77%	21.68%	33.33%	24.79%	22.22%	23.86%
Mean	4.63	4.90	4.81	4.59	5.06	4.91	4.53	4.71
N	142	128	163	143	18	117	171	306

Note: Median answer in bold font.

Graduate

Table PedSur.N: Effort Proportional to Enrollment in Graduate Classes

	Change in Size		Appointment		All
	Const.	Inc.	CT	TT	
1: Str. Disagree	3.45%	8.00%	0.00%	7.27%	6.67%
2	13.79%	12.00%	40.00%	9.09%	11.67%
3	17.24%	16.00%	0.00%	16.36%	15.00%
4	10.34%	20.00%	0.00%	14.55%	13.33%
5	27.59%	0.00%	0.00%	16.36%	15.00%
6	20.69%	28.00%	40.00%	21.82%	23.33%
7: Str. Agree	6.90%	16.00%	20.00%	14.55%	15.00%
Mean	4.34	4.40	4.60	4.47	4.48
N	29	25	5	55	60

Note: Median answer in bold font.

*“For each row-item below, please choose one or more column-categories that best describes the **impact of significant increases in class size on the Course Design of your classes.**”*

Undergraduate

Table PedSur.O: Impact of Significant Increases on Undergraduate Course Design

		N/A	No Chg.	Dec.	Inc	Disc.	Red.
Const. Enrollment	Breadth of Learning Objectives	4.93%	48.59%	38.73%	1.41%	0.70%	11.97%
N = 142	Breadth of Course Content	4.23%	50.70%	38.03%	3.52%	1.41%	12.68%
	Depth of Course Content	3.52%	30.99% ¹	57.75% ¹	1.41%	0.70%	13.38%
Inc. Enrollment	Breadth of Learning Objectives	0.78%	50.78%	35.94%	2.34%	1.56%	17.97%
N = 128	Breadth of Course Content	1.56%	43.75%	40.63%	5.47%	2.34%	17.97%
	Depth of Course Content	0.78%	18.75% ¹	70.31% ¹	3.91%	2.34%	18.75%
All	Breadth of Learning Objectives	2.94%	50.00%	36.27%	1.63%	1.31%	15.03%
N = 306	Breadth of Course Content	2.94%	48.37%	38.24%	3.92%	1.96%	14.71%
	Depth of Course Content	2.29%	27.45%	61.11%	2.29%	1.30%	15.36%

Note: Most frequent response in bold font.

¹ On average, a significantly smaller proportion of faculty who experienced significant increases in class size report no change to the depth of course content compared to faculty who did not experience significant increases. (Wilcoxon rank sum test, $p < 0.05$). A significantly larger proportion of these faculty report decreasing the depth of course content (Wilcoxon rank sum test, $p < 0.05$) than faculty who did not experience significant increases in enrollment.

Graduate

Table PedSur.P: Impact of Significant Increases on Graduate Course Design

		N/A	No Chg.	Dec.	Inc	Disc.	Red.
Const. Enrollment	Breadth of Learning Objectives	3.45%	55.17%	34.48%	0.00%	0.00%	6.90%
N = 29	Breadth of Course Content	3.45%	58.62%	34.48%	3.45%	0.00%	0.00% ¹
	Depth of Course Content	3.45%	48.28%	48.28%	0.00%	0.00%	3.45% ²
Inc. Enrollment	Breadth of Learning Objectives	0.00%	64.00%	20.00%	4.00%	0.00%	16.00%
N = 25	Breadth of Course Content	0.00%	60.00%	20.00%	8.00%	0.00%	20.00% ¹
	Depth of Course Content	0.00%	32.00%	32.00%	12.00%	0.00%	28.00% ²
All	Breadth of Learning Objectives	3.33%	58.33%	28.33%	1.67%	1.67%	11.67%
N = 60	Breadth of Course Content	3.33%	56.67%	28.33%	5.00%	1.67%	11.67%

Depth of Course Content 3.33% 38.33% **41.67%** 5.00% 0.00% 16.67%

Note: Most frequent response in bold font.

¹ On average, a significantly greater proportion of faculty who experienced significant increases in class size report to redesign the breadth of course content compared to faculty who did not experience significant increases. (Wilcoxon rank sum test, $p < 0.05$). Indeed, a significantly larger proportion of these faculty report decreasing the breadth of course content (Wilcoxon rank sum test, $p < 0.05$).

² On average, a significantly greater proportion of faculty who experienced significant increases in class size report to redesign the depth of course content compared to faculty who did not experience significant increases. (Wilcoxon rank sum test, $p < 0.05$). Indeed, a significantly larger proportion of these faculty report decreasing the depth of course content (Wilcoxon rank sum test, $p < 0.05$).

*“For each row-item below, please choose one or more column-categories that best describes the **impact of significant increases in class size on Student Learning Activities** in your classes.”*

Undergraduate

Table PedSur.Q: Impact of Significant Increases on Undergraduate Student Learning Activities

		N/A	No Chg.	Dec.	Inc	Disc.	Red.
Const. Enrollment N = 128	Active Student-Involvement in Learning	2.82%	11.27%	74.65%	2.82%	5.63%	14.08%
	Lecture-Based Instruction	5.63%	33.10%	9.15%	47.89%	0.00%	8.45%
	Homework Assignments	2.82%	31.69%	50.00%	2.11%	0.00%	18.31%
	Writing Assignments	11.27%	12.68%	61.97%	0.00%	9.15%	11.97%
	Experiential Learning	28.17%	19.01%	40.14%	0.70%	5.63%	11.27%
	Hands-On Learning	29.58%	16.90%	38.73%	1.41%	7.04%	11.97%
	Interactive Learning	13.38%	23.24%	38.03%	7.04%	7.04%	19.01%
	Classroom Debates	20.42%	16.20%	47.89%	2.82%	7.75%	10.56%
Inc. Enrollment N = 142	Active Student-Involvement in Learning	2.34%	7.03%	77.34%	3.91%	4.69%	16.41%
	Lecture-Based Instruction	2.34%	30.47%	8.59%	54.69%	0.00%	11.72%
	Homework Assignments	1.56%	32.81%	39.84%	5.47%	0.00%	26.56%
	Writing Assignments	6.25%	14.06%	61.72%	1.56%	12.50%	16.41%
	Experiential Learning	26.56%	14.06%	42.97%	3.91%	10.16%	12.50%
	Hands-On Learning	22.66%	20.31%	45.31%	1.56%	6.25%	13.28%
	Interactive Learning	7.81%	19.53%	49.22%	14.84%	6.25%	20.31%
	Classroom Debates	23.44%	15.63%	46.09%	1.56%	9.38%	13.28%
All N = 306	Active Student-Involvement in Learning	2.29%	10.78%	75.16%	2.94%	4.58%	14.38%
	Lecture-Based Instruction	3.59%	33.33%	8.17%	51.30%	0.00%	8.82%

Homework Assignments	1.96%	32.68%	45.75% ¹	3.60%	0.00%	20.92%
Writing Assignments	8.17%	14.71%	61.76%	0.65%	9.80%	13.73%
Experiential Learning	25.49%	18.30% ²	42.81%	1.96%	7.52%	11.11%
Hands-On Learning	25.16%	19.61%	43.14%	1.31%	5.88%	11.76%
Interactive Learning	9.80%	23.53%	43.14%	10.78%	5.88%	17.97%
Classroom Debates	21.57%	17.32%	46.73%	1.96%	8.17% ³	11.11%

Notes: Most frequent response in bold font.

¹ On average, a significantly larger fraction of faculty who have not taught classes of 66+ students would decrease homework assignments than those who have taught 66+ student classes (Wilcoxon rank sum test, p<0.10).

² On average, a significantly larger fraction of faculty who have not taught classes of 66+ students would not change experiential learning opportunities than those who have taught 66+ student classes (Wilcoxon rank sum test, p<0.05).

³ On average, a significantly smaller fraction of faculty who have not taught classes of 66+ students would discontinue classroom debates than those who have taught 66+ student classes (Wilcoxon rank sum test, p<0.05).

Graduate

Table PedSur.R: Impact of Significant Increases on Graduate Student Learning Activities

	N/A	No Change	Decrease	Increase	Discontinue	Redesign
Active Student-Involvement in Learning	1.67%	15.00%	68.33%	6.67%	3.33%	16.67%
Lecture-Based Instruction	3.33%	43.33%	8.33%	40.00%	0.00%	13.33%
Homework Assignments	3.33%	33.33%	33.33%	6.67%	0.00%	30.00%
Writing Assignments	13.33%	15.00%	55.00%	6.67%	0.00%	21.67%
Experiential Learning	30.00%	23.33%	33.33%	3.33%	6.67%	13.33%
Hands-On Learning	25.00%	21.67%	36.67%	10.00%	6.67%	8.33%
Interactive Learning	10.00%	25.00%	30.00%	18.33%	5.00%	12.96%
Classroom Debates	21.67%	33.33%	31.67%	5.00%	3.33%	13.33%

Note: Most frequent response in bold font.

*“For each row-item below, please choose one or more column-categories that best describes the **impact of significant increases in class size on Student Outcomes** (research, presentation, paper) in your classes.”*

Undergraduate

Table PedSur.S: Impact of Significant Increases on Undergraduate Student Outcomes

	N/A	No Change	Decrease	Increase	Discontinue	Redesign
Critical Thinking	2.61%	33.33% ¹	58.82% ²	1.96%	0.33%	7.84%

Student Presentations	15.03%	10.46%	57.52%	3.27%	12.75%	8.50%
Student Research	23.20%	17.65% ³	46.41%	1.31%	8.17%	8.82%
Student Skill Demonstrations	16.34%	16.99%	54.90%	0.10%	5.88%	10.46%
Student Learning Satisfaction	6.21%	22.22%	66.99%	2.29%	0.33%	4.25%

Notes: Most frequent response in bold font.

¹ On average, a significantly larger fraction of faculty who have not taught classes of 66+ students predict no changes to critical thinking than faculty who have taught 66+ student classes (Wilcoxon rank sum test, $p < 0.05$).

² On average, a significantly larger fraction of faculty who have taught classes of 66+ students predict a decrease of critical thinking than faculty who have not taught 66+ student classes (Wilcoxon rank sum test, $p < 0.10$).

³ On average, a significantly larger fraction of faculty who have not taught classes of 66+ students would not change student research than faculty who have taught 66+ student classes (Wilcoxon rank sum test, $p < 0.05$).

Graduate

Table PedSur.T: Impact of Significant Increases on Graduate Student Outcomes

	N/A	No Change	Decrease	Increase	Discontinue	Redesign
Critical Thinking	3.33%	50.00%	41.67%	3.33%	0.00%	6.67%
Student Presentations	8.33%	16.67%	51.67%	6.67%	10.00%	13.33%
Student Research	18.33%	31.67%	33.33%	5.00%	5.00%	15.00%
Student Skill Demonstrations	21.67%	18.33%	41.67%	16.67%	5.00%	16.67%
Student Learning Satisfaction	6.67%	36.67%	51.67%	3.33%	0.00%	5.00%

Note: Most frequent response in bold font.

*“For each row-item below, please choose one or more column-categories that best describes the **impact of significant increases in class size on Faculty-Student Interactions and Assessment** in your classes.”*

Undergraduate

Table PedSur.U: Impact of Significant Increases on Undergraduate Faculty-Student Interactions and Assessment

	N/A	No Change	Decrease	Increase	Discontinue	Redesign
Frequency of Individual Student-Instructor Interaction	1.63%	11.11%	81.70%	3.27%	0.98%	5.55%
Personalized Feedback to Students	1.31%	9.15%	82.35%	1.63%	5.23%	7.52%
Rapport with Students	0.70%	14.05%	80.07%	1.63%	3.92%	3.59%
Variety of Learning Assessment Techniques	3.92%	24.84% ¹	53.27%	6.86% ²	0.33%	17.97%
Frequency of Learning Assessment	3.27%	32.03%	53.27% ³	4.25% ⁴	0.00%	12.09%

Student Course Evaluation Ratings	7.52%	37.58%	53.92%	0.98%	0.00%	3.59%
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Notes: Most frequent response in bold font.

¹ On average, a significantly larger fraction of faculty who have not taught classes of 66+ students predict no changes to the variety of learning assessment techniques used than faculty who have taught 66+ student classes (Wilcoxon rank sum test, $p < 0.05$).

² On average, a significantly larger fraction of faculty who have taught classes of 66+ students state an increase in the variety of learning assessment techniques than faculty who have not taught 66+ student classes (Wilcoxon rank sum test, $p < 0.05$).

³ On average, a significantly larger fraction of faculty who have not taught classes of 66+ students predict no changes to the frequency of learning assessment techniques employed than faculty who have taught 66+ student classes (Wilcoxon rank sum test, $p < 0.05$).

⁴ On average, a significantly larger fraction of faculty who have taught classes of 66+ students state an increase in the frequency of learning assessment than faculty who have not taught 66+ student classes (Wilcoxon rank sum test, $p < 0.01$).

Graduate

Table PedSur.V: Impact of Significant Increases on Graduate Faculty-Student Interactions and Assessment

	N/A	No Change	Decrease	Increase	Discontinue	Redesign
Frequency of Individual Student-Instructor Interaction	1.67%	10.00%	78.33%	8.33%	0.00%	1.67%
Personalized Feedback to Students	1.67%	11.67%	81.67%	3.33%	0.00%	5.00%
Rapport with Students	1.67%	23.33%	70.00%	5.00%	0.00%	0.00%
Variety of Learning Assessment Techniques	6.67%	28.33%	45.00%	11.67%	0.00%	13.33%
Frequency of Learning Assessment	1.67%	30.00%	55.00%	6.67%	0.00%	10.00%
Student Course Evaluation Ratings	8.33%	41.67%	46.67%	5.00%	0.00%	0.00%

Note: Most frequent response in bold font.

Appendix 6 Report from the Policy Subcommittee

The following report was submitted by the policy subcommittee. The findings and recommendations of the committee are summarized in the main body of the committee report above.

The policies subcommittee of the Ad Hoc Class Size Committee investigated ways that class size impacts faculty workload assignment and faculty evaluation in annual appraisals and P&T. It also sought to identify example departmental policies that address class size/course enrollment and ways that class size impacts pedagogy in different disciplines. We collected information in three ways:

1. Review of departmental policy documents (Merit Metrics, Promotion & Tenure, Workload)
2. Survey sent to all department chairs and academic program directors
3. Interviews with several department chairs

In this section of the report we summarize key results from these three methods.

1. Document Review

We reviewed the Merit Metrics, Promotion & Tenure, and Workload policies for 55 academic programs for direct mention of class size and enrollment details. We have concluded that there is no standardization of policies and relatively few academic programs directly reference class size and enrollment details.

After conducting a key-word search related to class size (e.g., size, number, service course, honors add on, large, small), we quantified the frequency of class size and enrollment details mentioned in above policies. Only 29% (16/55) of academic plans directly mention class size while only 18% (10/55) specified the size of the class (e.g., small or large). Details on class size were most often mentioned in Promotion & Tenure and Workload. We found that 14.5% (8/55) of policies mentioned the class size number. Very few 5.5% (3/55) academic programs directly referenced a service course or honors add on.

Only 5.5% (3/55) of academic programs (Art History, Physiology, and Mathematics) mentioned at least four out of our six key-word searches and 60% (33/55) of academic programs had no mention of any of the above keywords. We recommend that academic programs prioritize including details on class size to provide expectations and clarification for faculty who teach.

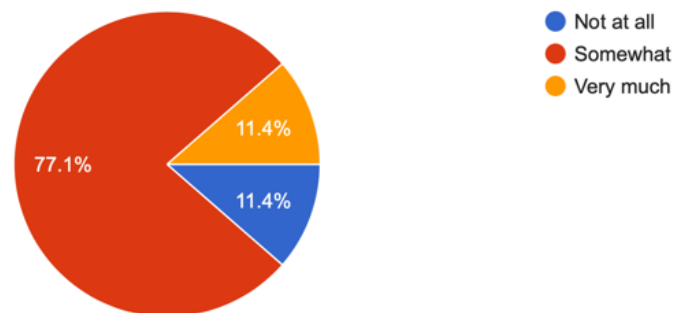
2. Survey & Chair Interviews

In addition to our qualitative policy review, we sent a survey to the chairs and directors of the programs across campus. The survey included quantitative and qualitative questions. We received 35 total responses from 33 unique departments/programs, representing all colleges except Health Sciences. Two responses were from faculty members who play a role in assigning teaching in their units. Before finalizing the survey questions, we conducted interviews with five department chairs to preview the questions and to learn about their experiences in greater detail than the survey would allow. Because we were interested in learning more about how departmental policies influence faculty teaching workload and evaluation, we interviewed chairs from departments whose policy documents include reference to class size or course enrollment (mostly workload documents, but in some cases P&T or merit metrics).

Quantitative Survey Results

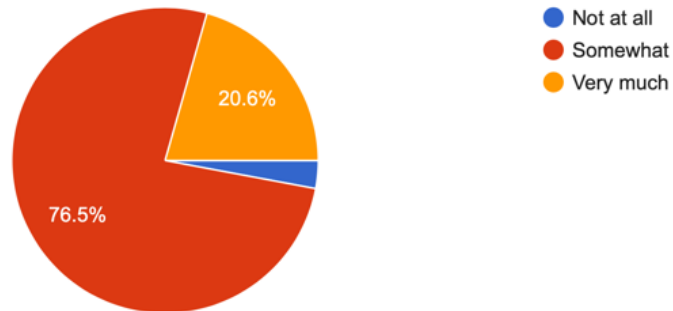
In your unit, to what extent is class size/course enrollment considered when assigning annual teaching workload?

35 responses



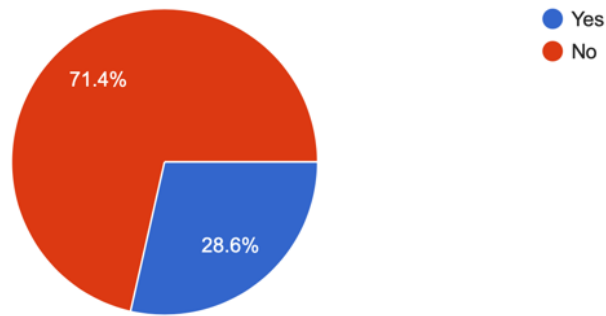
In your unit, to what extent is class size/course enrollment considered when evaluating faculty teaching contributions as part of the annual review process?

34 responses



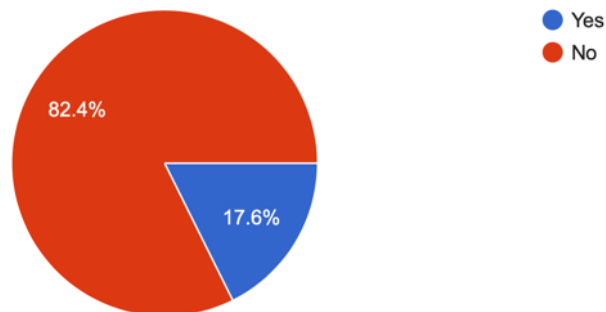
Does your unit have any specific policy that addresses course assignment and class size?

35 responses



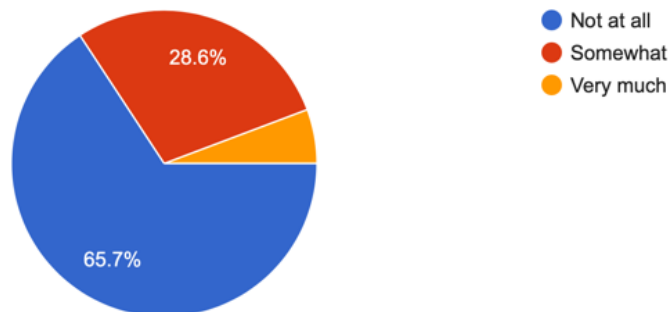
In your field, are there accrediting bodies and/or discipline standards that guide class size?

34 responses



To what extent have you considered using data on teaching effectiveness to determine class sizes in your unit?

35 responses



Qualitative survey results and chair interviews

Five qualitative questions asked respondents about the extent to which class size or course enrollment factors into faculty teaching workload and evaluation, whether the department has policies related to course assignment and class size, whether departments had discipline-specific standards that guide class size, and the extent to which departments have considered using data on teaching effectiveness to guide class sizes. The chair interviews used the same questions and elicited similar responses, so the committee is reporting the write-in survey responses and chair interviews together. The following themes emerged from the survey responses and chair interviews:

Class size is not the only factor related to the nature of teaching that impacts workload assignment or faculty evaluation. Other factors that were identified by chairs as impacting the way they assign teaching workload include:

- Curricular goals and course content
- Whether the course includes labs, field work, experiential learning, or applied experiences
- Whether the course is writing intensive
- Larger courses have more objective assessment; more writing intensive in smaller courses
- Whether the course is new - newly developed and/or new to that particular faculty member
- Level of course: grad vs. undergrad, intro vs. advanced
- Whether the course is an independent study or senior thesis
- Availability of TAs
- Junior status of faculty member
- Whether CT or TT (research-active) faculty
- Faculty preference for small or large classes - considered in workload negotiation
- Reducing faculty burn-out - rotating difficult/challenging assignments
- Equity helps to enforce collegial and equitable behavior
- Not having total control, e.g., higher administration may call for increased class size

Some departments have written policies that address course assignment/class size.

Examples include:

- Merit metric policies that award more points for classes of larger sizes
- Merit metric policies that mention class size and course release for research productivity
- Workload documents that mention class size either in general terms or specify each faculty member will teach a 100-seat class each academic year.
- Internal equity policy addresses scheduling (MWF vs T/Th) and requires all faculty to teach a mix of lower- and upper-division courses
- Effect of UD AAUP Collective Bargaining Agreement - 3 credit course has no differentiation based on class enrollment

A number of departments have informal policies/practices that address course assignment/class size, including:

- Providing TAs for large or time-intensive courses
- Capping classes at number appropriate for pedagogy and faculty workload

- Ongoing informal attempt to equitably distribute time/contact-intensive courses
- Extra teaching credit given for large classes
- Differentiating course teaching assignments based on level of course - intro/advanced undergraduate and graduate courses
- Classroom and lab space size influence enrollment
- Workload document used as guide only because workloads/classes are so complicated

Although the majority of chairs have not used data on teaching effectiveness to influence class size in their unit (see quantitative results above), several chairs provided write-in comments. Themes included:

- Smaller class size is perceived to be related to increased learning
- Many chairs would like to reduce class sizes in their unit, but are restricted by lack of resources (budget, faculty, TAs)

Appendix 7 Pedagogical Considerations and Best Practices for Large Classes

This appendix provides a CTAL report by Dr. Rose Muravchick on large class sizes (section 1) and a sample of the committee's research pertaining to the impact of large classes on pedagogy and student learning (section 2).

Section 1 CTAL Report on Large Class Sizes

Prepared by Dr. Rose Muravchick
Center for Teaching and Assessment of Learning
October 2021

Generally speaking, class size can have a negative influence on student learning outcomes for a given course, but many other factors may be equally or more significant than simply the number of students. To take just one example, from a national study of general education physics courses:

“Since institution type and class size seem to have no correlation with student learning, and because we can assume that these 52 classes are not all taught identically, we can conclude that the different gains achieved are related to the effectiveness of the teaching and learning that students’ experience in their classes.”⁵

Large enrollment courses are defined for the purposes of this local inquiry at UD as courses with more than 100 students per section. In a review of literature on teaching approaches and student outcomes (for which final grades are the common, but not universal, proxy) several key features emerge:

1) The method of instruction, and often the discipline of the course itself, may be more important than the size of the course in influencing student success

One study evaluated multiple variables within large enrollment courses, including categorizing courses based on discipline in order to evaluate the differing magnitude of effect sizes on final grades due to class size. In this study, Iryna Johnson identified three categories of courses where the impacts of class size on student final grades was most significant, and therefore three categories of courses that may be best suited to reductions in class size: Engineering, Biological Sciences, and Social Sciences.⁶ This study also considers that majors and juniors and seniors

⁵ Prather, Edward (2009) A national study assessing the teaching and learning of introductory astronomy. Part I. The effect of interactive instruction. *American Journal of Physics* 77:4, 320. <https://doi-org.udel.idm.oclc.org/10.1119/1.3065023>

⁶ Johnson, Iryna Y. (2010) Class Size and Student Performance at a Public Research University: A Cross-Classified Model Author(s): *Research in Higher Education* , DECEMBER 2010, Vol. 51, No. 8 (DECEMBER 2010), 717.

are likely to perform better in large courses than underclassmen and non-majors. In short, there are many variables in addition to class size that may impact student success in larger courses. However, some students (minoritized students especially) remain disadvantaged in *any* large course, regardless of discipline.⁷

In the case of first-year courses, the negative effects of lecture-heavy large enrollment courses are especially deleterious. January Cuseo has identified method of instruction among the 8 key factors that negatively influence student performance in very large courses:

(1) increased faculty reliance on the **lecture** method of instruction, (2) less **active student involvement** in the learning process, (3) reduced frequency of instructor **interaction** with and **feedback** to students, (4) reduced **depth of student thinking** inside the classroom, (5) reduced breadth and depth of course **objectives, course assignments, and course-related learning strategies** used by students outside the classroom, (6) lower levels of academic **achievement (learning)** and academic **performance** (grades), (7) reduced overall **course satisfaction** with the learning experience, and (8) **lower student ratings (evaluations)** of course instruction. [emphasis in original]⁸

Many of these factors are clearly tied to the sheer number of students in a class and faculty workload, however, it is possible that a course of *any size* that relies on lecture with limited engagement, feedback, and interaction, would also result in poor student outcomes.

2) Large-enrollment courses that have been redesigned to incorporate active learning techniques or signature pedagogies (such as PBL, TBL, SAIL, or Peer Instruction) require significant investments of faculty time and institutional support in the way of: additional funding, undergraduate TAs, graduate TAs, and staff time, modified classroom space.

Several examples from other institutions demonstrate both the efficacy of these approaches, and their costs. The [SCALE-UP](#) project (begun at NC State) took large-enrollment Physics courses traditionally taught as passive lectures and reformed them into small-group active-learning sessions. Sections of these courses at NC state now enroll about 99 students each, and successful outcomes for “at-risk” students (those who scored poorly on statistics exams) in these reformed physics classes are twice that of those who take a traditional lecture-based version of the course. SCALE-UP courses require special classrooms (round tables with 7-8 chairs, much like UD’s PBL-style classrooms).

A very-large enrollment General Education geosciences course (200-250 students) at the

⁷ Johnson (2010), 719.

⁸ Cuseo, J. 2007, January. The empirical case against large class size: Adverse effects on the teaching, learning, and retention of first-year students. *The Journal of Faculty Development* 22(1), p.2

University of Iowa was redesigned to incorporate active learning through an 8-month process with a team that included: an assessment professional, an instructional designer, course faculty across sections, and a senior TA.⁹ The redesigned course utilized a flipped-classroom modality, including a version of the SCALE-UP approach for structured in-class discussion, as well as relied on the LMS to provide students with frequent self-paced quizzing. Students in this redesigned course achieved final grades about ¾ of a letter grade higher than their peers in the traditional lecture section.

3) Some general pedagogical approaches, regardless of discipline, can positively impact student learning even in very large courses.

While many studies in this area focus on STEM courses (which tend to be the largest courses at most universities) several publications from the AAC&U indicate a set of generalizable practices that can positively impact student learning even in very large courses. One general principle is interactivity within a course. Prather, Rudolph and Brissenden state that: “Classes that spent 25 percent of their class time (or more) using interactive learning strategies averaged more than twice the normalized gain scores as compared to classes that spent less than 25 percent of class time teaching interactively.”¹⁰ Mary-Ann Winkelmes aggregated data from the [TILT project](#) and has used it to summarize a set of interactive teaching practices:

- Practices in large-enrollment courses (ranging from sixty-six to three hundred students in humanities and STEM courses; three hundred or more students in social science courses) that support student learning within individual classes:
 - Discuss assignments’ learning goals and design rationale before students begin each assignment (introductory social sciences).
 - Gauge students’ understanding during class via peer work on questions that require students to apply concepts you’ve taught (introductory social sciences, introductory STEM, intermediate and advanced undergraduate STEM).
 - Debrief graded tests and assignments in class (introductory humanities, introductory social sciences, intermediate and advanced STEM).
- The following practices were associated with increased future learning benefits for students in large-enrollment courses:
 - Discuss assignments’ learning goals and design rationale before students begin each assignment (introductory STEM).
 - Gauge students’ understanding during class via peer work on questions that require students to apply concepts you’ve taught (intermediate and advanced undergraduate STEM).

⁹ Russell, Jae-eun, Sam Van Horne, Adam S. Ward, E. Arthur Bettis III, Maija Sipola, Mariana Colombo & Mary K. Rocheford (2016) Large Lecture Transformation: Adopting Evidence-Based Practices to Increase Student Engagement and Performance in an Introductory Science Course, *Journal of Geoscience Education*, 64:1, 37-51, DOI: 10.5408/15-084.1

¹⁰ Prather, Edward, Alexander Rudolph and Gina Brissenden. (2011) [Using Research to Bring Interactive Learning Strategies into General Education Mega-Courses](#). *Peer Review* 13:3.

- Debrief graded tests and assignments in class (introductory social sciences, intermediate and advanced undergraduate STEM).¹¹

In this [summary report](#) used at Baruch College, Hanover Research identified several universal approaches to teaching larger classes more effectively. Among their findings is the importance of using technology tools to increase student active learning and feedback. As a general approach, teaching large classes effectively relies on tools and techniques to “shrink” the size of the classroom.

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Section 2 Empirical Research on Class Size

Ballen et al. (2018). "Do Small Classes in Higher Education Reduce Performance Gaps in Stem?". *BioScience*, 68 (8), 593-600.

The authors study the performance gaps between men and women in undergraduate biology courses at four R1 U.S. universities with class sizes ranging from 40 to 239 students. They find a significant interaction between class size and student gender: the larger the classes, the greater the achievement gap between women and men. **Larger class size is negatively correlated with women's academic performance** in these courses.

Bandiera, Larcinese, and Rasul (2010). "Heterogeneous Class Size Effects: New Evidence from a Panel of University Students". *The Economic Journal*, 120 (December), 1365-1398.

Studying final exam grades of undergraduate students at a leading university in the U.K., the authors find a **significant negative effect of class size on student achievement**. The effect is highly non-linear across the range of observed class sizes. Student achievement is significantly lower in medium classes (20-33 students) compared to small classes (1-19 students). While the authors find no effect for intermediate classes (34-103 students), they find a **significant negative effect for large-enrollment classes (104-211 students)**. (Investigating the underlying mechanisms for these class size effects, the authors neither find evidence for departments assigning instructors of different quality to different class sizes nor that faculty change their preparation or delivery when teaching different class sizes.)

Beattie, Irene R., and Megan Thiele (2016). "Connecting in Class? College Class Size and Inequality in Academic Social Capital," *The Journal of Higher Education*, 87:3, 332–362

Based on a randomized survey of 346 students enrolled at a public university, the authors studied academic (faculty-student and student-student) interactions within small and large classes. The study revealed that in large classes, students had significantly fewer interactions with professors and with peers about course content and ideas than students in smaller classes. **These results were magnified for students from minority groups. Large class sizes had significant negative effects on first-generation, Black, and Latino students with regard to discussing course ideas and their future careers with their instructors,** while large class size had no impact on other groups.

Bedard and Kuhn (2008). "Where Class Size Really Matters: Class Size and Student Ratings of Instructor Effectiveness". *Economics of Education Review*, 27, 253–265.

The authors study the impact of class size on student evaluations of teaching effectiveness using data from undergraduate economics classes at an R1 university in the U.S.. They find a **significant large negative impact of class size on average student evaluations of instructor effectiveness.** (For example, controlling for instructor and course fixed effects, average student evaluations of instructor effectiveness fall by 0.63 in classes of size 200-299 students compared to classes of size 20-39 students.) The authors state that their "results may help university administrators better evaluate instructors: high student evaluations may not imply better teaching performance if the high evaluations are caused purely by small class size." They recommend adjusting instructor's evaluation scores for class size effects to allow for comparison across different class sizes and courses.

Diette and Raghav (2015). "Class Size Matters: Heterogeneous Effects of Larger Classes on Student Learning". *Eastern Economic Journal*, 41, 273-283.

Using data from a liberal arts college in the U.S., the authors investigate the role of class size on student achievement as measured by course grades. They find a **significant negative impact of class size on course grades, and the effect is particularly pronounced for first-year students.**

Kara, Tonin, and Vlassopoulos (2021). "Class Size Effects in Higher Education: Differences Across STEM and non-STEM Fields". *Economics of Education Review*, 82, 1-13.

Using a large sample of undergraduate student data from the U.K., the authors find that **larger classes result in significantly lower grades with a larger negative effect for students in STEM fields than non-STEM fields**. Investigating the role demographic factors, the authors find evidence that **smaller classes particularly benefit students from low socio-economic, disadvantaged backgrounds** and higher ability students and men in STEM fields.

Kokkelenberg, Dillon, and Christy (2008). “The effects of class size on student grades at a public university”. *Economics of Education Review*, 27: 221-233.

Investigating a large sample of undergraduate student data at a northeastern public university in the U.S., the authors find that there is a **significant negative relationship between class size and student grades**. Kokkelenberg et al. point out that the negative effects of class size differ in magnitude across fields.

Mandel and Süssmuth (2011). “Size Matters. The Relevance and Hicksian Surplus of Preferred College Class Size.” *Economics of Education Review*, 30, 1073–1084.

Using data from a major German university, Mandel and Süssmuth find a **significant, negative, non-linear relationship between class-size and student evaluations of teaching effectiveness**. Further, using state-of-the-art contingent valuation methods, the authors **estimate students’ willingness to pay to avoid increasing the class by an additional student to be five Euros per semester (in 2007)**. This implies that, in a class of 50 students, each student is willing to pay, on average, 50 Euros per semester to avoid a moderate increase in class size from 50 to 60 students, for a total of 2,500 Euros; each student would be willing to pay, on average, 1,000 Euros to keep a class capped at 50 students to avoid a large-enrollment class of 250 students (for a total of 50,000 Euros).

Sapelli and Illanes (2016). “Class Size and Teacher Effects in Higher Education.” *Economics of Education Review*, 52, 19-28.

Sapelli and Illanes study the effect of class size on student evaluations at a large Chilean University and find that **increasing class size by one standard deviation leads to a 0.187 standard deviation decrease in student satisfaction (controlling for teacher and course fixed effects)**. Class size effects are significant, showing that students value smaller classes. The authors also conduct a policy experiment and find that while first-time instructors perform significantly worse than their seasoned peers, “beyond a certain level, the negative class size effect” outweighs the first-time instructor

effect. Specifically, for classes above 85 students, it is optimal to break up a class into two small classes with one of the smaller classes being taught by a new instructor.