

## **Guidance and Recommendations for Instructors and Students on Proctoring and Final Examinations**

### **Working Group on Online Examinations and Proctoring for the Spring Semester 2020**

April 20, 2020

An examination is a two-way pact between students and instructor. Conducting examinations, particularly under the unprecedented circumstances we find ourselves in the spring of 2020, ultimately relies on trust: Instructors must be able to trust students to act with academic integrity and students must be able to trust their instructors and peers to do the same. Instructors need to convey an expectation of integrity and dedication to learning to the students, and instructors need to live up to student expectations of instructor fairness and commitment to teaching. While this culture of integrity should exist throughout the academic experience, exams - and particularly during these challenging times - can support this culture of integrity: exams are a part of learning, and part of the educational experience of the class. A fair test that gives students the chance to show what they have learned in the class in turn facilitates student academic integrity.

Our recommendations and guidance on the following topics are detailed below:

1. Communication, the Honor Code, and examinations
2. Student expectations of instructors and other students
3. COCI's guidance on final examinations
4. Surveying students prior to the examination
5. Online resources that exacerbate or enable academic misconduct, and reporting student misconduct to the Center for Student Conduct.
6. Providing clear written guidance to students on expectations for conduct during collaboration.
7. Providing clear written guidance on the availability of GSIs and Instructors during the exam to address students' questions, concerns, and internet connectivity issues.
8. Providing students with an opportunity to test drive the online submission procedures for the exam and requesting student feedback.
9. Reducing Incentives for misconduct and perceptions of misconduct, and the goals of "deterrence" versus "apprehension" as a factor in a proctoring approach.
10. Guidance for different types of exams.

We recognize that our recommendations seek an “ideal” that will not often be fully met. However, we feel it is better to expect the ideal than to limit our expectations to mediocrity.

Remote proctoring options were also discussed widely by the working group. These options include commercial programs from third-party vendors and video-based proctoring. With the shelter-in-place orders and the circumstances that students now find themselves in, we were unable to find a viable option that would address student privacy concerns and accommodations. For instance, the Working Group decided that [Respondus LockDown](#) will not be allowed for use this semester due to concerns about the accessibility of the product and incompatibility with equipment loaned to students during the COVID19 shelter-in-place. Thus, the EVCP’s executive order on March 27 prohibiting “outside proctoring products and Zoom proctoring” during the Spring 2020 semester remains in place.

## **1. Communication, the Honor Code, and examinations**

They key to making the two-way pact between instructors and students work is communication.

*The most important element of our recommendations to instructors is to convey to students in a clear and concise manner the expectations that the instructor has for them on an exam, and to frame those expectations in positive terms of the behavior we trust and expect them to live up to.*

At the same time, instructors need to make it possible for students to communicate the challenges they face in taking exams at a time when there will be great disparities in the conditions our students face. In the present situation, where casual communication is limited and the opportunity to correct miscommunication is especially challenging, clear and concise written communication to students is critical.

The [UC Berkeley Honor Code](#) is short, clear, and aspirational.

“As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others.”

Instructors are encouraged to share the Honor Code with their students and teaching staff. We recommend including the Honor Code in the cover sheet or beginning of exams. This effort should be combined with discussions or communications that ensure students in the class understand what constitutes a violation of this code when taking an exam. At the same time, we suggest it is important, when sharing and discussing the code with students, that the tone

should clearly convey that our (instructor) expectation is that the vast majority of students adhere to the Honor Code, and that in fact, few students actually engage in academic misconduct.

Beneath the Honor Code sentence, instructors may wish to add their own expectations for the students tailored to the framework of the exam, for example:

- I alone am taking this exam.
- I will not have assistance from anyone while taking the exam.
- Other than with the instructor and GSI, I will not have any verbal or written communication with anyone else while taking the exam, and while others are taking the exam.
- I will not have any other browsers open while taking the exam.
- Unless I have authorized use of assistive technology, I will not use any external devices, such as phones, tablets, or additional computers during the entire period this text is available for students to take.
- I will not refer to any books, notes, or online sources of information while taking the exam, other than what the Instructor has allowed.
- I will not take screenshots, photos, or otherwise make copies of exam questions to share with others.

Instructors may also choose to have students sign a copy of the Honor Code at the beginning and/or end of the exam, or acknowledge the Honor Code at the start of an electronic examination.

## 2. **Student expectations of instructors and other students**

Examinations are a time when we are calling on students to act with the integrity expected as members of the Cal community and, moreover, *for students to both support and hold each other to that standard*. At the same time, students should be advised that instructors are being challenged to develop and to use assessments that are fair in these circumstances. This means, for example, that instructors take into account the sometimes great differences in the security of student access to the internet, quality of workspace, and capacity for unexpectedly remote learning modes. Instructors also need to follow appropriate DSP guidelines.

## 3. **COCI's guidance for final exams**

We strongly urge instructors to review the [Committee on Courses and Instruction's \(COCI's\) guidance for final exams for the Spring Semester of 2020](#):

We believe it is prudent to point out that COCI offered the following guidance for the timing of a final exam in Spring 2020:

“For exams that will still be administered during the assigned time and day slot in the Final Exam Week, instructors should be mindful that many students are now in different time zones across the globe. Changing the scheduled day and time of an exam for all students may cause conflicts with other exams. Imposing the same examination time for all students, regardless of circumstances, on the other hand, may cause unneeded hardship for students who may thereby be forced to take the exam at an inopportune time (e.g., 2:00 am). Where feasible, consider using available tools in bCourses [or Gradescope] to assign a time limit to an activity during a specified period (e.g., a 3-hour time limit in a 24-hour period).” This period ought to include the original final exam time.

Alternatively, we have noted that some instructors have decided to offer two exam times approximately 12 hours apart (adjusted to make sure the times are reasonable for the majority of students) so that students in diverse time zones will have a viable exam option. In this case, students should be asked ahead of time which time slot they will use to take their exam. Generally, one of these exam times ought to be the original exam time.

Note that other forms of final assessments given in lieu of the final exam should be due during the original final exam window, although students can be given the option to submit earlier.

#### **4. Surveying students prior to the examination to assess their needs.**

We recommend that the instructor review their students' DSP accommodations, potential internet connectivity issues, workspace conditions and geographic location, and then make a plan to address their students' needs. Instructors should consult with DSP Disability Specialist Services in a timely manner if they have concerns about providing an accommodation. Members of the working group have developed a [sample google survey](#) that can be modified to an instructor's needs.

#### **5. Online resources that exacerbate or enable academic misconduct, and the importance of reporting student misconduct to the campus Center for Student Conduct**

Instructors should be aware of sites such as [Chegg](#) and discussions on Reddit such as the following one on [cheating when being recorded on zoom](#) that can facilitate academic misconduct. We have also received reports of students

copying exams questions to [Chegg](#) and then using the answers for their solutions.

If an instructor is reusing problems from textbooks for your final examinations, then they should be advised that the solutions for many of these problems can easily be found online.

Following the [Berkeley Campus Code of Student Conduct](#), it is important for instructors to report suspected cases of misconduct to the [Center for Student Conduct](#) (CSC). Most often complaints are resolved informally through discussions with the CSC's staff. First time offenses are often treated as an educational intervention, but repeated conduct violations are treated seriously. To detect repeated violations, the CSC relies on reporting from instructors. It is also possible that the case is due to a misunderstanding: the CSC provides an opportunity to work through such cases and arrive at a resolution in a just way. It is recommended that instructors pay attention to such cases and if needed, revise their grading to reflect the outcome. Processes are clearly described on the [CSC website](#).

**6. Providing clear written guidance to students on expectations for conduct during collaboration.**

When appropriate for a given subject or assignment, the committee recommends that instructors consider explicitly allowing students to collaborate with one another rather than attempting to prohibit or eliminate illicit collaboration. In this case, expectations for what constitutes "allowable collaboration" should be clearly outlined in advance and repeated at the beginning of the assignment or exam. If the exam, project, or assignment includes sections for which collaboration is allowed and sections that should be completed individually, these sections should be clearly marked as such.

When allowing collaboration, the committee also recommends requiring students to name their collaborators and detail the specific contributions of each to the final product.

For example, instructions for allowable group work might state the following: "Along with your final submission, each group of students that collaborates must create and submit a document that includes 1) a Group Project Record/Statement of Individual Contributions to the Group and 2) the group's shared notes. The Group Project Record should be on the first page and it should consist of a chart or a list that accounts for the work of each individual and makes clear how each person supported the end product." For example:

- Student A: Found sources 1, 3, and 7; drafted Part 1; identified analytic connection between Parts 1 and 3; made the map
- Student B: Found sources 2, 6, and 8; annotated all sources; edited all sections
- Student C: Found all images used in the presentation; drafted the introduction and Parts 2 and 3; wrote all image captions
- Student D: Found sources 4 and 5; explained how XYZ concept applied to our topic; developed the Spark presentation

Alternatively, instructions for an exam, paper, or project that allows collaboration in the form of discussion of relevant materials but require individual answers or essays might state something like “Students may collaborate by sharing notes and discussing the relevant course material with a classmate, but each student’s submission should answer the question or address the prompt by making a specific, unique argument in your own words. If you collaborate with a classmate, each individual must include a 1-paragraph statement that reflects what you discussed and how the discussion informed the development of your specific argument. This statement is expected, and it is better to disclose cooperation rather than attempt to hide it.”

**7. Providing clear written guidance on the availability of GSIs and Instructors during the exam to address students’ questions, concerns, and internet connectivity issues.**

We recommend providing contact information for a member of course staff who can help if a student experiences technical issues. Please ensure that the GSI or instructor is available for the entire exam time, including extended time for students with DSP accommodations. Communicate to students as early as possible what the protocol will be for asking for help or raising concerns to an instructor or GSI. Course staff should have a plan for how to escalate any issues to you. We also recommend only using bCourses and third party tools (such as Gradescope) that are supported by the campus. TopHat and Piazza are not supported by the campus and their use is discouraged.

Possible communications strategies include:

- Where possible, make use of communications tools that students are already familiar with, unless new tools provide necessary features. Be sure to establish and provide access to any new software or tools as early as possible.
- Use your course forum (bCourses) as a means of sharing announcements and having students post private questions to course staff.

- Instructors should try to mimic what they would normally do in an in-person exam. For example - if a student privately asks a question and we realize that the exam question was genuinely unclear or there was missing info, etc., “we’ll write that clarification on the board for everyone to see.”
- How to balance private vs. public questions? Perhaps, the students always ask private questions and the instruction staff decide if what gets posted publicly (and how to communicate that to everyone).
- Use Zoom (and optionally Zoom Breakout Rooms) to allow students to join a call with course staff.
  - It might be useful to require the entire class to join a Zoom link for introductory announcements from the instructor. If students have Zoom open on a 2nd browser, they can use the Chat function to ask their private questions, and then the instructor can use Chat to post public answers if appropriate. But it would be critically important to turn off the setting “Allow meeting participants to send a private 1:1 message to another participant.”
- Depending on the nature of an examination, an instructor could share a link to a Google Doc, web page, or even a live screen share that will automatically update with announcements.
- We have heard that some instructors and GSIs have found it useful to create a phone number using Google Voice to avoid sharing their personal cell phone.

## 8. **Providing students with an opportunity to test drive the online submission procedures for the exam and requesting student feedback**

We recommend that instructors offer students a “dry-run” experience with your exam setup at least a few days beforehand. We encourage offering some credit for completing this work to help ensure all students give it proper effort. The dry run can also help assure that instructors and GSIs are able to deliver the exam and collect it as planned - we anticipate that instructors will benefit from practice as well. Communicate expectations for the exam scenario as this will also help reduce anxiety.

When testing your exam process:

- Instructors should keep the dry run as close to the actual exam format as possible. If one is using a timed assignment or randomizations, for example, be sure to enable those features even if they don’t seem necessary. Instructors might also consider doing a second dry run with just their course staff.
  - In both bCourses and Gradescope, instructors can make duplicate courses and import their teaching staff as students. This will ensure that all parties understand the exact setup of a student.

- [Duplicating a course in bCourses](#)
- [Make a new course in Gradescope](#)

bCourses also supports [viewing your course as a Test Student](#).

- If a DSP student indicates that they cannot upload an exam by following the available instructions, provide an alternate way for them to submit the exam. Some students may not be able to access the platform with assistive technology.
- Both bCourses and Gradescope allow an instructor to duplicate assignments. This function can be used to create the dry run assignment with a similar setup.
  - [Duplicating a Quiz in bCourses](#)
  - [Duplicating an assignment in Gradescope](#)

## 9. **Reducing Incentives for misconduct and perceptions of misconduct, and how the goals of “deterrence” versus “apprehension” factor into a proctoring approach.**

The perception that others in a class are benefiting from misconduct can undermine the culture of integrity that allows a fair exam process, creating an incentive for misconduct. It is important that students perceive that they will not be disadvantaged by the misconduct of other students, a problem that can be exacerbated by curve grading. Instructors should explain that they have processes for detecting misconduct (e.g., using tools like Turnitin), that their exam process is focused on assessing learning not creating a competition, and that cheating is taken seriously. It is important to assure students that misconduct by others will not disadvantage them, and that it is in fact rare. Perhaps most importantly, students should perceive that an exam is fair, and gives them a chance to show what they have learned. We recommend avoiding the use of curves to compute grades.

Developing processes that emphasize deterring misconduct can begin with encouraging and nurturing a culture of integrity. Webcam proctoring has been proposed as a possible deterrent or method of apprehension, but is fraught with difficulties including, but not limited to, privacy considerations for students that are currently under stay-in-shelter orders, internet connectivity issues, and reliability of external vendors of proctoring services, that cannot be resolved for Spring 2020. The campus will continue to discuss and explore options for Summer 2020, Fall 2020, and beyond, and issue recommendations at a later date.

## 10. **Guidance for different types of examinations**



Regardless of the format, instructors should clearly explain to students the format of the exam, well in advance. One aim is to reduce the anxiety many students are feeling about the uncertainty of how remote exams are going to work. Keep in mind that this is not only unfamiliar but also likely inconsistent across their different classes. In some cases, communication about format might also deter misconduct by highlighting how the format being used is designed to limit students sharing answers (e.g., shuffling the order of questions or answers, using different versions, etc). In all cases, clearly stated advance communication about the format of the exam helps everyone prepare for exams under these new conditions and anticipates any needs.

Some of our recommendations involve using Question Banks. Instructions on constructing these resources can be found at

<https://community.canvaslms.com/docs/DOC-26578-how-do-i-create-a-question-bank-in-a-course>

and

<https://haas.berkeley.edu/haas-digital/instructional-resilience/video-tutorials/how-to-create-and-use-questions-banks-in-bcourses/>

a. *Open Book/Open Notes Exams*

In recognition of the fact that most students will be in a position to access their books and notes, we suggest -- depending on the nature of the course -- it may be beneficial to design exams to reflect, rather than restrict, this access. Open-book exams provide an opportunity to assess conceptual mastery rather than recollection. Some considerations in designing these exams include:

→ *Time limits*: the more limited the time, the less a student can rely on searching through materials and the more they will need to study in advance in order to complete the exam.

→ *Course material*: to deter students from turning to Google or outside sources or assistance, write questions that are closely and specifically connected to course content (e.g., compare the evidence used by Author A and Author Z; apply concept B to the data presented in article Y). This can also be done in auto-gradable questions (multiple choice, T/F, etc.) by constructing scenarios to which students must apply knowledge derived from course lectures and readings.

→ *Embedded Conceptual Assessment*: if seeking to assess students' ability to use certain concepts or analytic skills from the class, an instructor could provide a previously unseen document, source, dataset, etc., and ask how it could be used to support or contradict arguments made by Scholar C and Scholar X.

→ *Applied Questions*: writing questions centered on fictional scenarios or actors provides a mechanism to assess how deeply students understand

specific ideas while limiting the ability of students to turn to the internet for answers. Examples might include wholly or partially invented chemical compounds, math formulae, plants, locations, or characters.

→ *Randomized Exams*: The order of exam questions can be randomized, more than one version of an exam can be used with different questions or question organization, or exams can use various combinations of both.

→ *The platform bCourses allows instructors to build multiple Question Banks*. Multiple '[Question Banks](#)' can be utilized in the same examination to divide sections of the test. Both the answers and question order can be randomized in bCourses. A large Question Bank allows for each student to receive a randomized subset of questions from the bank, so that every student is receiving a different test.

→ In line with our first recommendation, the first Question Bank should contain the Honor Code acceptance question.

b. *Timed examinations*

Both bCourses and Gradescope support setting a time limit for an assignment. Both platforms allow you input extensions for students who receive accommodations. Students in other timezones can be individually assigned to a more favorable time slot in the details section of Quiz in bCourses. For instructions see [bCourses timed quizzes](#) [Gradescope timed assignments](#)

When using timed examinations, we recommend giving a “starting window” of at least 15 minutes so that students do not need to rush to take advantage of the full time allotted to them. For large courses, this will also alleviate potential sources of instability on web services.

c. *Shuffling the order of questions and answers*. The platform bCourses allows instructors to easily randomize all question types, and the answer order for multiple choice questions. To randomize answers, select 'Shuffle Answers' in the Quiz details (see Figure c.1). Instructors cannot use answers choices such as D) both A and C; when randomizing answer choices because answer choices A and C will differ for students. Instead, instructors must repeat the text of answer choices A and C. For example, with the answer choices A) - fast, B) = big, and C) = slow, the answer choice could not be D) both A and C but instead would read D) fast and slow. Creating a 'question group' randomize questions within a quiz see section d below. For guidance on creating exams under the 'Quiz' course tab see [Canvas Quiz guidance](#)

Quiz Type Graded Quiz

Assignment Group Midterms 1 & 2

**Options**

Shuffle Answers

Figure c.1. Select “Shuffle Answers” to randomize the answers to the questions.

- d. *Employ different versions of the exam created using bCourses Question Banks:* creating different but equitable versions of an exam - and telling students in advance - is a method of deterrence by essentially informing students that they are better off focusing on their own exam and not wasting precious time trying to contact fellow students to compare questions and answers. Depending on the nature of the exam, instructors don't necessarily have to create entirely different versions. Indeed, instructors might be able to get this effect, with less effort on the part of the instructional staff, by having different versions of just a small part of the exam.

One way that instructors can construct different versions of the exam using bCourses is to populate questions in a Question Bank and have students answer a subset of these questions. An exam that includes a Question Bank can randomly select a subset of the questions for each student (for example, a random subset 25 of the 100 total questions). Initially, the instructor can set the individual point value for all questions in the Question Bank to 1 pt and then can adjust the point value later when building the exam and adding a '+New Question Group'.



Individual exams can use more than one Question Bank. For example, an exam could have three sections drawn from independent Question Banks: Honor Code; multiple choice; essay (see Figure d.1). To construct such an exam, first, store the questions in the Question Banks. When building the exam in bCourses 'Quiz', select your questions from 'New Question Group'.

Points 100 ⊗ Not Published ⋮



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[Details](#) Questions



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⋮ **Group HC** Pick 1 questions, 0 pts per question  

Questions will be pulled from the bank: [Honor Code Question](#)

⋮ **M2 Multiple Choice Question** Pick 35 questions, 2 pts per question  

Questions will be pulled from the bank: [Midterm2 MCQ's](#)

⋮ **Ms Short Answer Questions** Pick 3 questions, 10 pts per question  

Questions will be pulled from the bank: [Midterm2 SAQ's](#)

+ New Question
+ New Question Group
🔍 Find Questions

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Notify users this quiz has changed 
Cancel
Save & Publish
Save

*Figure d.1. Example bCourses exam built with 'Quiz' using three independent '+New Question Groups' drawn from the Question banks. Section two is multiple choice and will randomly draw 35 of all the questions the instructor created in the Question Bank. Point values are adjusted up from 1 in the Question Bank to 2 pts and 10 pts in exam for sections two and three, respectively.*

- e. *Exams for students with Disabled Students' Program DSP accommodations:* instructors can either [1] enter alternate durations in the details section of a bCourses Quiz using the "Moderate Quiz" function to assign specific students more time, or [2] duplicate a prepared exam in Quiz and make adjustments for DSP accommodations. Duplicate exams can be set up with longer exam duration (150%, 200% time, etc.) and then assigned to individuals with specified levels of accommodation. Grades from the DSP-specific exam will need to be imported once more into Gradebook for the entire class examination to correctly calculate course grades for the accommodated students.
- f. *Final papers/take-home essay exams*  
 Many of the suggestions for open-book exams apply to final papers and take-home exams, understood to be papers/exams for which students have more than 24 hours to complete. Additional considerations and suggestions include:  
 → *Required use of (only) course materials:* If the final paper/take-home

exam is based entirely on course materials or course materials and additional information/sources provided by the instructor, it can be useful to insist that students only use materials from the class and/or certain course materials and/or a minimum number of course materials (possibly from different segments of the class). This serves both to assess their learning of course material and to deter using assignments from the internet.

→ *Cover sheets*: A cover sheet provided by the instructor that lists the requirements/acceptable materials and requires students both to indicate that they have complied and to document what they used can be useful. It can deter the use of prohibited external sources, create a check for students to ensure they've met the requirements, and reduce time spent by readers/GSIs/instructors to check exam compliance.

→ *Assignment types*: It can be helpful to identify course learning goals in both content and skills, and mix and match a certain skill with specific content to ensure the exam/paper assesses what the student should have learned this semester. In addition to more typical explanatory or argument-driven essay exams, curation assignments, applied assignments, and mock peer review assignments can offer opportunities to assess student learning.

→ *Curation assignments* ask students to collect and select a limited number of examples tied to a theme (the more specific, the better - or an instructor can set a broad topic that students can narrow according to their interests). The basis could be course materials or broader. It can be helpful to identify an imagined audience beyond the instructor (campus, 5th graders, state legislators, museum goers, an interest group, etc.). The assignment could then require a companion essay that uses the course materials to frame, explain, justify, and analyze the selected options. A corollary is a timeline assignment in which students have to pick X number of most important events/figures/issues connected to a course theme and explain/justify the selection.

→ *Applied assignments* may take the form of a policy memo, a letter to a corporate board, a briefing for a legislator, etc. The task ultimately requires students to synthesize course material to make an argument about what could or should be done and why by drawing on research results, conceptual tools, analytic skills, and course materials.

→ *Mock peer review assignments* give students an article/chapter/proposal related to the course and assign them the task of assessing its strengths and weaknesses and making recommendations using the ideas and concepts they learned in the class. This could be an article or chapter students have not seen before, a mock research paper or grant proposal written at a level that makes sense for the class, an assessment of whether a source fits an imagined anthology, or even

whether a piece of scholarship should be taught in a future iteration of the class.

→ *Questions centered on fictional (or very unique) scenarios or actors* provide a mechanism to assess how deeply students understand specific ideas while limiting the ability of students to turn to exam services or the internet for answers. Examples might include wholly or partially invented chemical compounds, math formulae, plants, locations, or characters.

g. *Final reflection*

In lieu or as part of a more standard final exam, instructors might consider requiring a short paper reflecting on what the student learned over the course of the semester. In all of these, emphasizing specificity and the use of examples can create quite meaningful documentation of learning.

- Possible questions include:

What have you learned this semester? What terms and concepts do you now recognize or understand differently? What terms, concepts, and ideas are more complicated now? What are you now able to explain (to your family, to a friend, to a roommate, to anyone else you may encounter)? How do you read/think about current events differently? How can you use information and ideas from this class now and in the future?

- Possible requirements include:

→ Reference a minimum of [X] course materials in the reflection.

→ Select a recent news article/op-ed/tweet and use it to structure the student's reflection. Are there terms the student read differently? Can the student situate the issues raised in different or more complex ways? If the student were the editor, how would they push the writer to clarify or extend the article? If the student met the writer, how would this class inform questions the student might ask them?

→ The student could reread 1-3 course readings and discuss how they read them differently now than compared to before they took this class. What terms or references can the student identify or situate? What connections can the student make to what they have learned?

→ The student could review an assignment from earlier in the course and revise it. What can they do better, more efficiently, more clearly, etc. than they were able to do at the beginning of this class? Why? What helped them to improve over the semester?

→ Identify a challenge the student faced in this course, explain the challenge, identify what they did to overcome it, and reflect on

what it means about this course's material/design/goals. What can the student carry with them into the future from the class?

### **Membership of the Working Group on Online Examinations and Proctoring April 2020**

This group charged by the EVCP Paul Alivisatos in April 2020 to address the following questions:

1. What strategies for remote exams will support learning and academic integrity? What would best support exams in large classes? Of these strategies, which best meet the needs of DSP students?
2. What are the principles that should underlie any decision to procure remote proctoring services or other digital tools to address issues of academic integrity, and accessibility?
3. What products or services for remote proctoring would best meet our needs, assuming they meet the criteria expressed in Item 2?

The working group was tasked with providing their recommendations to the EVCP by Monday April 20, 2020.

Membership of the working group consisted of

Cathy Koshland, Vice Chancellor, Undergraduate Education (Co-chair)

Oliver O'Reilly, Chair, Berkeley Division of the Academic Senate (Co-chair)

Michael Ball, Lecturer, Department of Electrical Engineering and Computer Sciences

Deborah Barnett, Chief of Instruction and Curriculum and Director of Online Education, School of Public Health

Gail Brager, Professor, Department of Architecture

Serena Chen, Professor, Department of Psychology

Shawna Dark, Chief Academic Technology Officer, Executive Director of Research, Teaching, & Learning

Lynn Huntsinger, Professor, Department of Environmental Science, Policy, and Management

Terry Johnson, Faculty Director, Center for Teaching and Learning

Robert Kayen, Professor, Department of Civil and Environmental Engineering

Georgina Kleege, Professor, Department of English

Liwei Lin, Professor, Department of Mechanical Engineering

Mike Meighan, Academic Coordinator, Department of Molecular & Cell Biology

Karen Nielson, Director, Disabled Students' Program

David Presti, Teaching Professor, Department of Molecular & Cell Biology

David Romer, Professor, Department of Economics

Scott Seaborn, Interim Campus Privacy Officer, Office of Ethics, Risk and Compliance Services

Alexis Shusterman, Lecturer, Department of Chemistry

Ronit Stahl, Assistant Professor, Department of History

Steve Trush, Lecturer, School of Information

David Wagner, Professor, Department of Electrical Engineering and Computer Sciences