

Authentication/Proctoring Solution Matrix

	Kryterion	ProctorU	Software Secure Remote Proctor Now	BioSig	Respondus Monitor	Voice Proctor (VP)
URL	https://www.kryteriononline.com/delivery_options/online_proctoring/	http://www.proctoru.com/	http://www.softwaresecure.com/product/remote-proctor-now/	http://www.biosig-id.com/	http://www.respondus.com/products/monitor/	http://www.voiceproctor.com/
Type	Live proctoring plus audio/video recording; no audio/visual recording for Option 1 Proctor: student ratio = 1:4, may reach 1:6, may even go as high as 1:8 or 10 depending on access by unregistered testers* Option 2 can be as high as 1:20	Live proctor; recording if aberrant behavior occurs. proctor: student ratio = 1:4 typical, not to exceed 1:6	Audio/video recording; no live proctor during exam; exam is reviewed by proctor after the exam; flagged items are submitted to a second tier for review	Authenticates the physical user versus verification if using questions or regular passwords	Students start LockDown Browser, log into the LMS and complete a brief startup sequence prior to the exam The student and the surrounding environment are recorded during the entire exam Instructors can quickly review details of the assessment, and even watch the recorded video	* Voice matching technology using a phone * Option to use webcam for initial voice print registration and kept in records for access by UAB * Exam must be created using VP software * Answer random questions during exam process by phone
Capacity (# students per exam instance)	Approx. 500	Approx. 100 but can accommodate larger numbers with prior notification.	Approx. 500 starting in a 20-minute window		There are NO limits — period. A course can use Respondus Monitor with 3 exams or 30. The length of the exams doesn't matter either	
Cost per Exam	Option #1: \$14 per 1-hour exam; \$5 per additional hour Option #2a: \$20 per 1-hour exam; \$5 per additional hour-student monitoring Option 2b: \$25 per 1 hour exam; \$5 per additional hour-student and environment monitoring	\$17.50 per 1-hour, \$22.50 per 2 hr. exam; \$8.75 per additional hour-student, screen, and environment monitoring	Proctor Now: \$15 1-hour exam; \$20 per 2-hour exam, etc. Proctor Pro: \$150 camera purchase; \$45 annual license fee, \$5 per exam* Cost assessed based on time spent in the exam for both options, e.g. a 1.5 hour exam for a student who takes 52 minutes = \$15	Cost can be as low as \$4.20 per course per student. <input type="checkbox"/> This fee provides unlimited identity verifications in as many courses that student takes in a year! <input type="checkbox"/> If a student takes 3 courses and is required to verify 16x per course (2x/week) before gradable events the price is around \$.25/use. <input type="checkbox"/> We are also prepared to offer an additional 10% discount on the license fees only in the current Price Quote. <input type="checkbox"/> As an introduction to our Suspicious Activity Report, we are including a Buy-One-Get-One-Free offer. <input type="checkbox"/> These reduced fees and Buy-One-Get-One Suspicious Activity Report are only available if we have a signed agreement before year end 2013 and Deployment in 2013 or Q1 2014. <input type="checkbox"/> Students can use same password for multiple courses in a year without extra charge	Free Pilot - 2 months. As a Lockdown Browser client - we receive 200 "free" seats per year. If purchased in bulk, a 1,000-seat license is \$3,950 annually, with additional blocks of 1000 seats for \$1950. A "seat" is one student per course where Respondus Monitor is used. If a course has four exams that use Respondus Monitor, only one seat is counted per student. If a student uses Respondus Monitor in two courses, it is counted as two seats. *Respondus Monitor requires a campus-wide license of LockDown Browser. "Campus-wide" Pricing for Respondus LockDown Browser: Under 2,000 students \$2195 2,001 to 2,500 students \$2495 2,501 to 5000 students \$3145 5,001 to 10,000 students \$3695	\$40/student/year for unlimited exams
Additional Costs and Equipment, Software and License Needed	Option 1: None Option #2a: None; requires one-time installation of the Sentinel secure software [requires administrator rights] Option #2b: External camera - \$50	None	Proctor Now: None Proctor Pro: External Camera purchased from software secure \$150 camera purchase; \$45 annual license fee,	NO Hardware required – eliminates cost and scalability issues <input type="checkbox"/> A single license allows unlimited use (authentications) for 12 months <input type="checkbox"/> License Pricing can be just over \$4.00 per course for unlimited authentications (based on 3 classes/year)		
Test Security and Monitoring	<u>Option #1:</u> Student is monitored by live proctor Instructor establishes allowed test aids and proctor checks environment <u>Option #2a:</u> Above conditions plus: recording Sentinel secure software locks student browser Proctor can address aberrant behavior and stop the test with screen prompts <u>Option #2b:</u> Above conditions plus broader room monitoring	Student and screen are monitored by live proctor Instructor establishes allowed test aids and proctor checks environment Proctor can address aberrant behavior with student directly and stop test or record student and screen as the instructor directs.	No live proctor; post-exam review of recording only Proctor Now: audio meter monitors voice changes Proctor pro: has lockdown capability-	<input type="checkbox"/> Allows student ID authentication along all points of course delivery for periodic/random challenges		

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Identity Validation	Current: Q4: keystroke and facial recognition biometrics Currently, there is no authentication other than signing in to Blackboard, and key stroke and facial recognition launched later this year for an additional fee.	Current: Photo ID; Axiom Identify-x questions Q4: Addition of BioSig biometric ID validation	Proctor Now: Photo ID and Keystroke biometrics Proctor Pro: Finger swipe, Photo ID and Keystroke biometrics	Keystroke biometrics		For any given exam, schools have the OPTION of setting how many proctored events will occur and for which students. Proctored events can take 4 different forms: 1 The system calls the student at the beginning of the exam and asks the student to read a passage that appears on the screen. 2 The system calls the student at a random point during the exam and asks the student to verbally answer a previously answered exam question. 3 The system calls the student at a random point during the exam and asks the student to verbally explain why a given choice on a previously answered multiple choice question is incorrect. 4 The system calls the student at a random point during the exam and asks the student to verbally answer a "challenge question" which is a derivative of a previously answered question using altered fact patterns. All responses are matched to the student's original voice print and are evaluated for correctness based on the student's written response.
Registration for Test	Not required but encouraged; non-registered test takers are accommodated, and this can affect proctor: student ratio	Student must set an appointment for a test, or pay a \$5 fee to take unscheduled exam	None	None		All responses are matched to the student's original voice print and are evaluated for correctness based on the student's written response.
Test Conditions	Controlled by the proctor who has the ability to stop test and display interventions on the student screen	Controlled by the proctor who has the ability to communicate with the student regarding test condition violations	Uncontrolled; flagged incidents reviewed post-test	<input type="checkbox"/> Age and language agnostic <input type="checkbox"/> Audit trails provide standard activity reports available to admin or faculty through web services <input type="checkbox"/> Expanded platinum reports create lists of suspicious activity and summarizes all student experiences <input type="checkbox"/> Unique closed loop automatic password reset and allows continuity		
Post-Test Review	Instructor accesses flagged events on the video (stored on Kryterion servers) through the Blackboard grade center	Does not routinely record exams; they have the capability, and will do so based on student request ProctorU begins recording when aberrant behavior is detected. A report is sent to the instructor with audio/visuals for instructor review of specific incidents.	Trained proctor reviews the exam, and submits aberrations to a second tier for review			
Comments	Ronan 12/10/2013: We extended the Kryterion pilot with the School of Public Health through the Summer; Courtney and her faculty declined to continue with that in the Fall and we had no additional takers. Student feedback was more negative than positive for the first effort, the Spring term, and we ran it again during Summer using on-board cameras (instead of Kryterion's custom camera which had created problems for at least a couple of students). The second run in the summer was smaller, but faculty members declined to use it again during the Fall (Courtney, please correct me if my notes are wrong on this summary).		From: Brendan Bellefeuille [mailto:Brendanb@softwaresecure.com] Sent: Monday, January 06, 2014 2:44 PM To: Kathryn M Mergl Subject: RE: Remote Proctoring Hi Kathy, I wanted to circle back around with you on this – the product we offer now is entirely different than we originally showed your IT group. I'd like to setup a few minutes where we can discuss it, and if it's a decent fit we can setup a webinar. Will that work? Brendan Bellefeuille Software Secure Brendanb@softwaresecure.com Office - 617.658.2840 Fax – 617.340.6388		Ronan 12/10/2013: Respondus rolled out their Respondus Monitor option as a companion with Lockdown browser in August. This would be a viable option for low- to mid-stakes testing, but has some holes for high stakes exams. It is feasible that it could be used in conjunction with other cheating reduction approaches for final exams and other high stakes options, but we have not had any takers for a pilot. We've been pushing it to faculty through with the school administrators and instructional designers without success to date. If paired with strong controls on test environment, good practice on test construction, and a few well-placed behavioral nudges, this could be an effective institutional option.	Integrates with Canvas