



Introduction



The Green Teaching Certificate Program at American University is an example of a unique, yet simple way to achieve the dual goal of promoting awareness of the environmental effects of higher education and maximizing the use of technology in the classroom by rewarding professors for teaching sustainably with a “Certified Green Course” logo on their course syllabi.



Two of the main areas for which applicants can collect points towards their certificate are (1) reducing paper use – achieved for example by posting readings and assignments electronically; only accepting electronic

assignments from students; or scheduling exams in a computer lab; and (2) saving energy and reducing emissions – achieved for example by scheduling office hours around class time to minimize commutes to campus; using online tools for online office hours; or using video-conferencing to bring guest speakers into the classroom.

The Green Teaching Certificate Program not only has affected sustainability on campus considerably, through the many concrete results of the green measures certified faculty have committed to, but has also resulted in a significant increase in the use of online course tools by certified faculty.

Since it was launched, the program has quadrupled the number of participating professors, with more than

100 faculty certified every year, and over 330 faculty certified at least once in the last five years. The program has also expanded beyond American University, being replicated by four universities (Howard University, Duke University, Catholic University, and Gallaudet University).

The Green Teaching Certificate Program has also become a part of American University’s greater sustainability goals. In 2011, AU became one of the first universities in the nation to achieve a gold rating in the Sustainability Tracking Assessment and Rating System (STARS), run by the Association for the Advancement of Sustainability in Higher Education (AASHE). The Green Teaching Program contributed to AU’s score in the innovation category of STARS.



Background Information



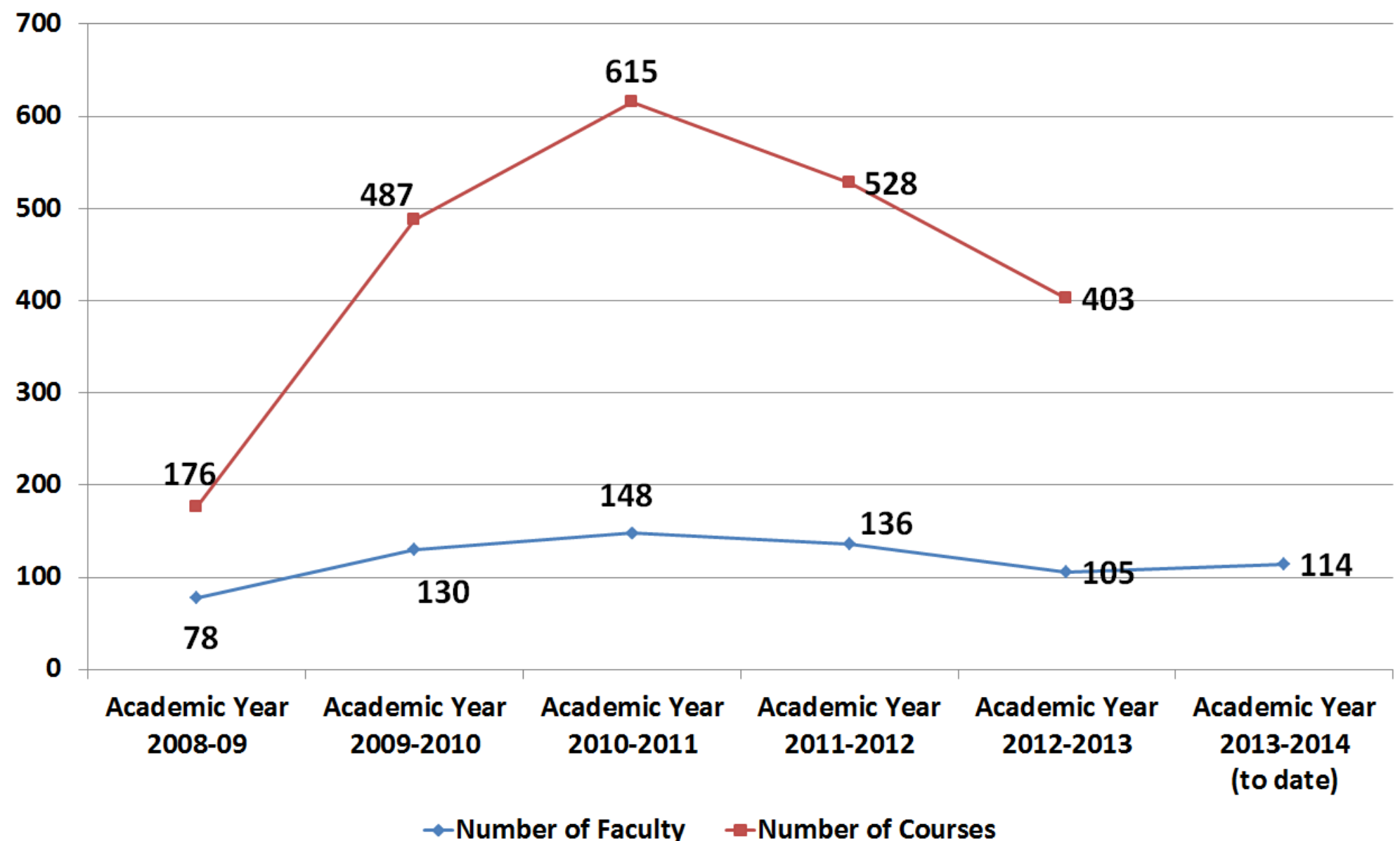
The Green Teaching Certificate program, now in its sixth year, was drafted and launched in the summer and fall of 2008. The program started as an attempt to provide incentives to teach sustainably while creating a greater awareness of the effect of their teaching and learning on the environment among both professors and students. At the same time, the program has come to serve a dual purpose in that it also provides faculty with a new set of incentives, as well as cues and tips, on how to better utilize the university's online course management software and other tools to interact with and promote collaboration among students online.

Since its inception the Green Teaching program has been improved through the input of participating faculty, and

has grown both internally, peaking at 148 faculty in 2010-2011 (330 individual faculty have been certified at least once in the last six years), and externally, with four universities launching

similar programs based on the AU model (Howard University, Duke University, Catholic University of American, and Gallaudet University) with several others about to follow.

Number of Certified Green Professors at American University 2008-2013





Getting Certified



The Green Teaching Certificate is based on a system of self-reporting. Faculty members at American University can qualify for a Green Teaching Certificate by answering a number of questions about their efforts to make their courses more sustainable, through saving paper, conserving energy, reducing pollution, teaching about sustainability, and other measures.

The certification form runs on the SharePoint platform, but can just as easily be run through Blackboard, allowing applicants both to instantly access their certification score, and to return to the questionnaire at a later time to revisit their answers.

"This program gives me an incentive to do better and continue to make my courses more environment-friendly in the future."

Valentina Pagliai (Professorial Lecturer, American University)

The Certification Process, Step by Step:

1. Faculty are given a link to the Green Teaching Certificate SharePoint form;
2. Faculty fill out and submit the Green Teaching Certificate form on SharePoint, where they also apply for bonus points and can submit their syllabi;
3. CTRL staff evaluate the bonus points and add these to points of the automatically graded main form;
4. CTRL staff place the Green Teaching logo on the course Blackboard pages and syllabi;
5. CTRL staff send certified faculty a message about their certification, along with their syllabi and a link to their personalized certification page;
6. Faculty can revisit their personal certification page SharePoint at any time

Certification Levels:

Depending on how many points they earn, faculty can get certified at **five different levels**. This has proven to not only provide incentive to improve scores over time, but also allows us to reward small contributions to making education greener.

4 Apples/Gold
(90 Points or more)



4 Apples
(75 - 89 Points)



3 Apples
(65 - 74 Points)



2 Apples
(55 - 64 Points)



1 Apple
(45 - 54 Points)





What We Ask



Green Teaching Certificate applicants can collect points by committing to the following measures:

Reducing Paper Use:

- Send students syllabus and handouts electronically (5 points)
- If printing syllabi or handouts, print double-sided (2 points)
- Request that students read the Academic Integrity Code online (1 point)
- If assigning student poster presentations, allow students to project these onto the wall (1 point)
- Have students submit their assignments and papers electronically, and return them electronically (2-5 points)
- If allowing students to hand in hard-copies of their work, require double-sided printing, and allow single spacing and reduced margins (2 points)
- If giving quizzes or tests, give them online (1-2 points)
- If you giving in-class exams, have your students type their exams in a computer lab (1-2 points)
- Accept only electronic versions of all papers, tests and assignments (3 bonus points)
- If using paper for classroom activities, use scrap paper (1 point)
- If posting PowerPoint presentations online, save the file with six slides per page and eliminate graphics and colored backgrounds (2 points)
- If possible, use the chalkboard/whiteboard rather than a flip chart (1 point)
- If bringing coffee or tea to class, use a reusable mug (1 point)
- Allow students to bring a laptop or tablet to class for note-taking (1 point)
- Take attendance electronically (2 points)
- Use a podcasting program to record supplementary materials electronically (2 points)
- Assign e-books rather than printed books (1 point)
- Only require students to purchase books from which the majority of chapters have been assigned as required reading (2 points)
- Recommend an earlier version of the main text and provide electronic materials to bring it up to date (1 point)
- Recommend buying used books (2 points)
- Keep a copy of reference books available on reserve at the library (1 point)
- Use electronic versions of articles and book chapters (5 points)
- In the last session of the course, circulate a sign-up sheet for students who would like to sell their books, and provide this list to students in the following semester (2 points)
- Avoid ordering desk copies of your books unless you really need them (2 points)
- Encourage students to read online materials online, rather than printing them (2 points)

"I have made some green adjustments over the course of my class this semester. Therefore I retook my certification quickly and ended up with an even higher score."

Jason Wolf
(Adjunct Professorial Lecturer, American University)



What We Ask (continued)



Saving Energy and Reducing Emissions:

- Use energy-efficient equipment (5 points)
- Turn off the lights if the room has enough daylight, or when you leave the room (5 points)
- Reduce the energy use in rooms with adjustable heat/AC (1 point)
- Turn off any electronic classroom equipment that you are not using (2 points)
- Turn off lights and equipment when you leave your office (2 points)
- Take the stairs to your office or your classroom (1 point)
- Schedule office hours before or after class to reduce commutes to campus (5 points)
- Make up missed classes virtually (1 point)
- Bike, walk, or use public transportation to come to class (1 - 4 points)
- Encourage students to walk or take public transportation to off-campus meetings (1 point)
- Use speakerphone or videoconferencing for remote guest speakers (2 points)
- Use an online forum for appointments when you do not usually come to campus (2 point)

- Use an online forum to hold review sessions (1 point)

Other Measures:

- Teach about aspects of the environment within your subject area (2 points)
- Have your students take the Sustainability Tour at AU (1 point)
- Recycle transparencies and other materials from previous courses (1 point)
- Include a Green Teaching initiative section in your syllabus informing students about the program, and encouraging them to support it (2 points)
- Use the option of individualized questions to add a question about your green teaching to the end-of-semester student evaluations (2 points)
- Allow CTRL staff to post a detailed summary of your Green Teaching Certificate commitments and score on your Blackboard pages (5 points)
- Allow CTRL staff to post a comprehensive online survey on Green Teaching on your Blackboard course pages at the end of each semester (2 points)

- Recommend the Green Teaching Certificate to a colleague (2 points)

Bonus Points:

In Addition to the points gathered by answering the questionnaire, applicants can receive bonus points for any measure they are taking to make their courses greener that is not listed in the Green Teaching Certificate Questionnaire.

“The Green Teaching Program resources provided me with great ideas to make my classes “greener” - things I never would have thought of on my own, so thank you!”

Brenda Kirkwood (Instructor, American University)

Why Bonus Points are Great:

Many of the ideas for items on the standard questionnaire that we use to certify faculty today came from the bonus points awarded to faculty in previous years. Allowing for bonus points not only keeps the door open for new ideas, but rewards applicants for **everything** they do to make their courses greener.



The Benefits



Improved Campus Sustainability

- Reduced use of paper
- Reduced use of energy
- Reduced emissions
- Reduced use of paper cups and other consumer goods
- Increased recycling efforts

AU Biology Professor Chris Tudge, who teaches large sections of BIO 100 with as many as 150 students, is on his sixth year of being a Certified Green Teacher. Last year, he moved the multiple-choice exams for his largest class to an online format to save paper, and has also committed to only posting his syllabi electronically. He estimates that, between the two, he saves about **5,000 sheets of paper** a year.

Increased Incentive to Use Online Teaching Tools

- Increased use of online assignments
- Increased use of e-books and other multimedia and interactive learning media
- Increased use of video-conference tools for remote guest-speakers
- Increased use of chat tools for office hours
- Documented increase in the overall use of Blackboard at American University

Other Benefits

- Increased student knowledge about sustainability issues
- Increased student participation in sustainability efforts
- Initiation of dialogues about teaching, learning, technology, and sustainability
- Increased visibility of your university among prospective students
- Improved scores on sustainability evaluations of colleges and universities



The Challenges



Recruiting faculty

- The beginning is the hardest. It gets easier with time (snow ball effect)
- Find allies in Department Chairs and Deans to help advertise the program
- Create additional incentive through prizes and awards
- Partner with a student environmental organization to involve students in recruiting their professors to the program

Managing a growing program with limited resources

- Involving student environmental groups that may be able to provide volunteer help
- External funding is not a must, but a possibility
- You may make the argument that a green teaching program saves your university money through reduced printing, electricity use etc.

Balancing sustainability goals with pedagogical goals

- Reading online vs. on paper and its impact on student learning
- Allowing laptops in the classroom may disrupt teaching and learning
- Not everyone teaches a subject that can be related to the environment
- Not all students may have equal access to technology



Some Statistics



The Green Teaching Program's Effect on the Environment:

Some concrete effects that AUs Green Teaching Program have on campus sustainability:

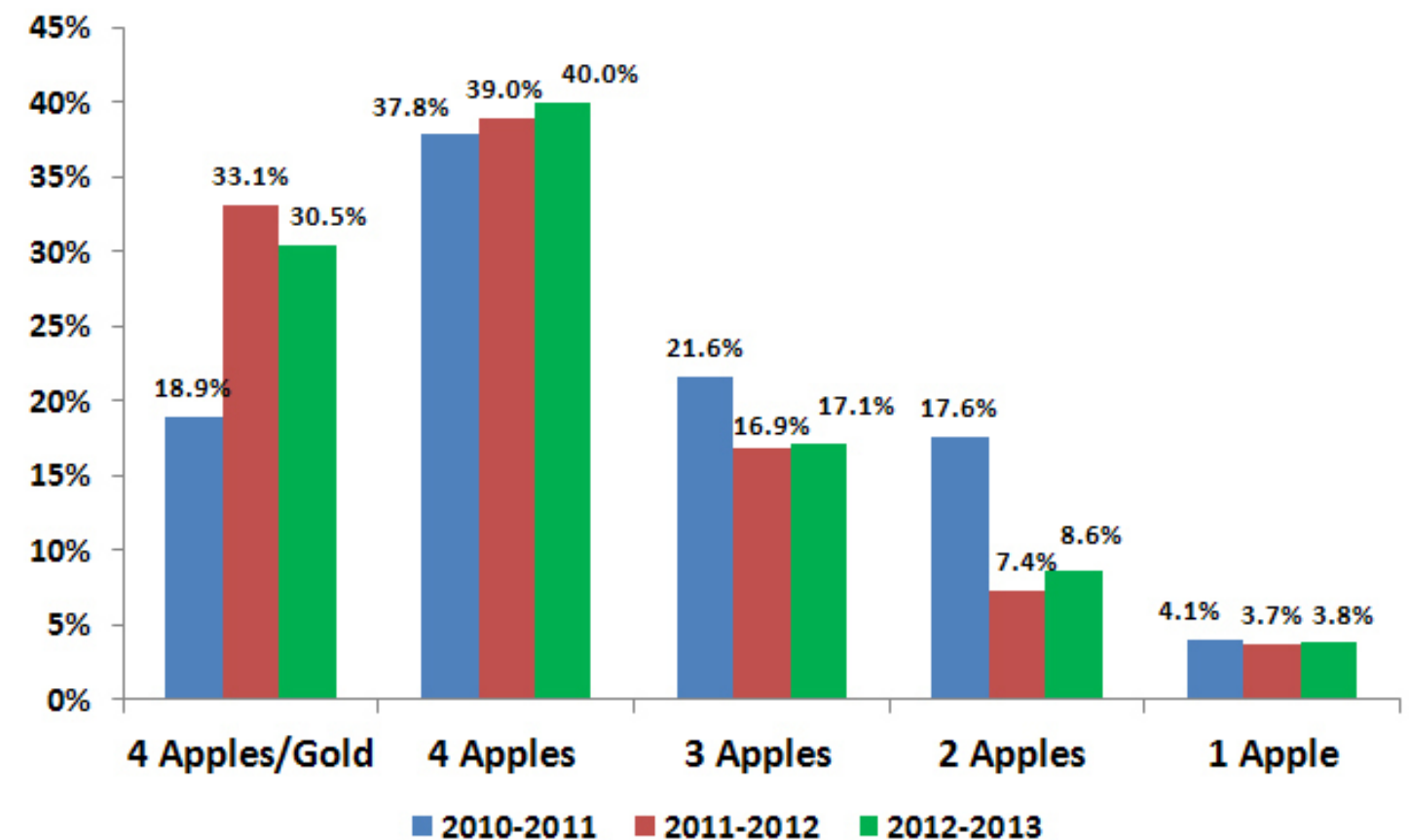
- **443,200 sheets of paper** were saved in the since the program was started by the **554 faculty** who committed to not printing their syllabi¹
- Around **2,500 courses**, with a total enrollment of approximately **62,500 students** have been exposed to the Green Teaching Logo on their Blackboard course banners since 2008
- **366 of 713** Certified Green Professors committed to **accepting only electronic versions** of all papers, tests and assignments from 2008 until today

¹ Assuming that each faculty member taught an average of four classes per year, with an average of 25 students in each class, and that their syllabi were an average of 8 pages long.

Not just more, but better!

When looking at change in the proportion of certified faculty who qualified for the different levels of the certificate, we were happy to discover that qualification at the higher levels increased over time. Concretely, this means that relatively more faculty commit to more measures to make their courses greener (see figure below).

Comparative percentages of faculty qualifying for the five levels of the Green Teaching Certificate in 2010-11, 2011-12, and 2012-13





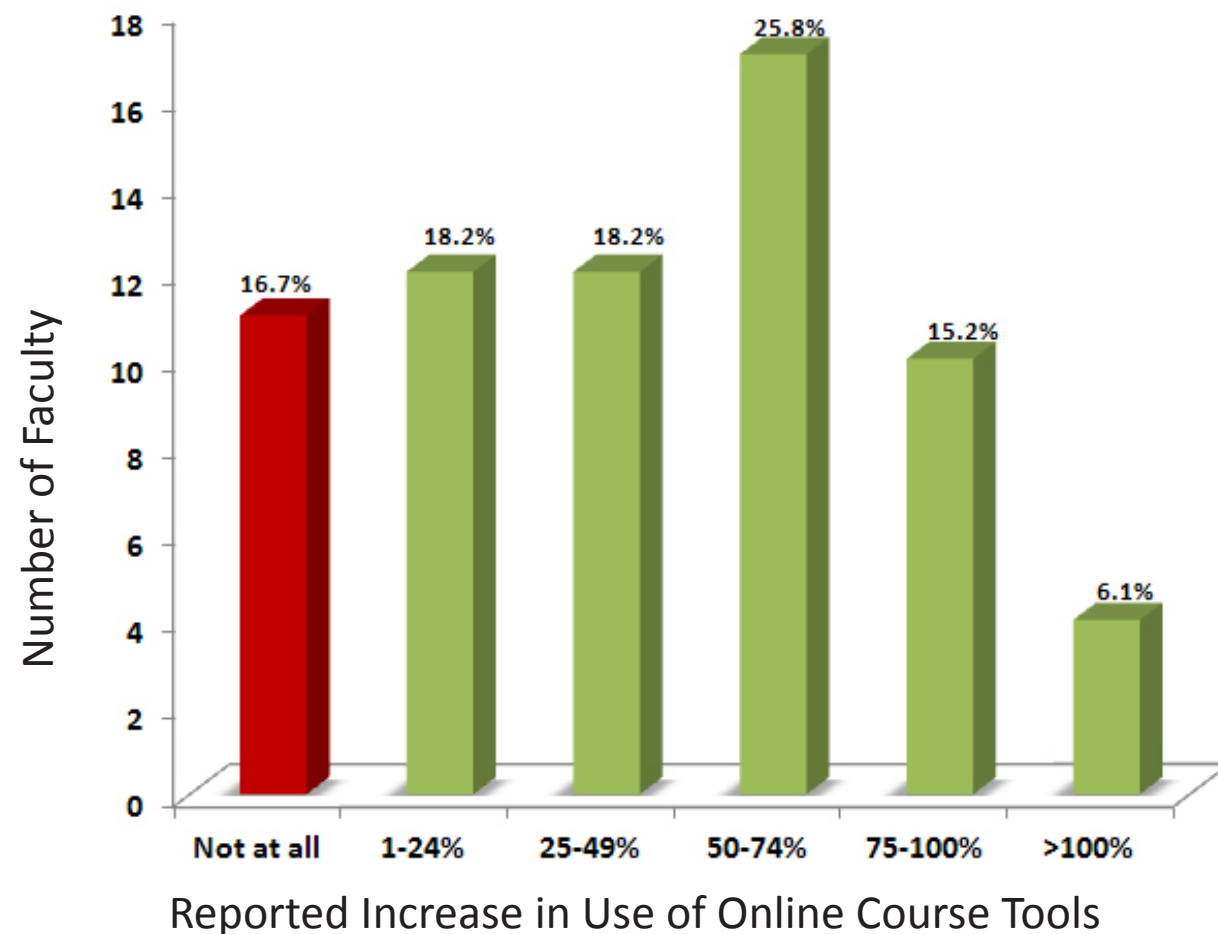
Some Statistics



The Green Teaching Program's Effect on the Use of Classroom Technology:

In the early fall of 2011 the 255 American University faculty who had been certified at least once since the program's first year were surveyed on how teaching green affected their use of classroom technology. 97% of respondents reported being Blackboard users when they applied for a Green Teaching Certificate. The reported increase in technology use resulting from certification is displayed in the figure below.

As a result of applying for a Green Teaching Certificate, approximately how much did you increase your use of online course management tools? (N = 66)



Source: Survey distributed to the 255 American University faculty who earned a Green Teaching Certificate at least once during the last three years.

Other comments by survey respondents on how applying for a Green Teaching Certificate affected their technology use:

- It has pushed me in the direction of turning to technology resources and tools much more so than physical/in-classroom tools. This has been educational and fun, and at times frustrating, but overall, it has greatly benefited my courses.
- It has bolstered or underscored my use of instructional technology, although my students don't always like reading everything online.
- I've justified my use of my iPad 2 rather than my computer for daily work, given that it takes so much less energy.
- It's made me much more conscious of when I actually need to duplicate things for class on paper. I also became aware of how much using technology in teaching enhances my communication with students.
- I now accept all take-home assignments electronically (homework, quizzes, projects). I now use online quizzes for certain courses. I have students fill out mid-term course evaluations online.
- It had made me post all materials online, instead of printing copies for the students, even when I think some thing can be harder to read online. I have stopped printing my lecture notes as well.

In addition to Blackboard, survey respondents reported using the following online course management tools:

wikis
websites
blogs
Diigo
Facebook
Googledocs

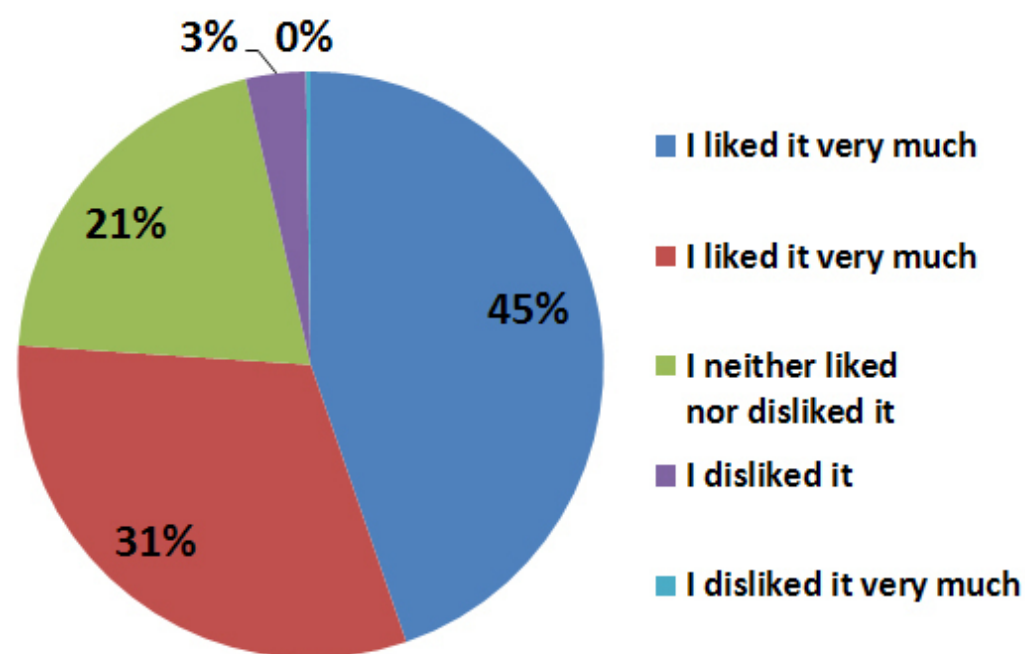


What Students Think

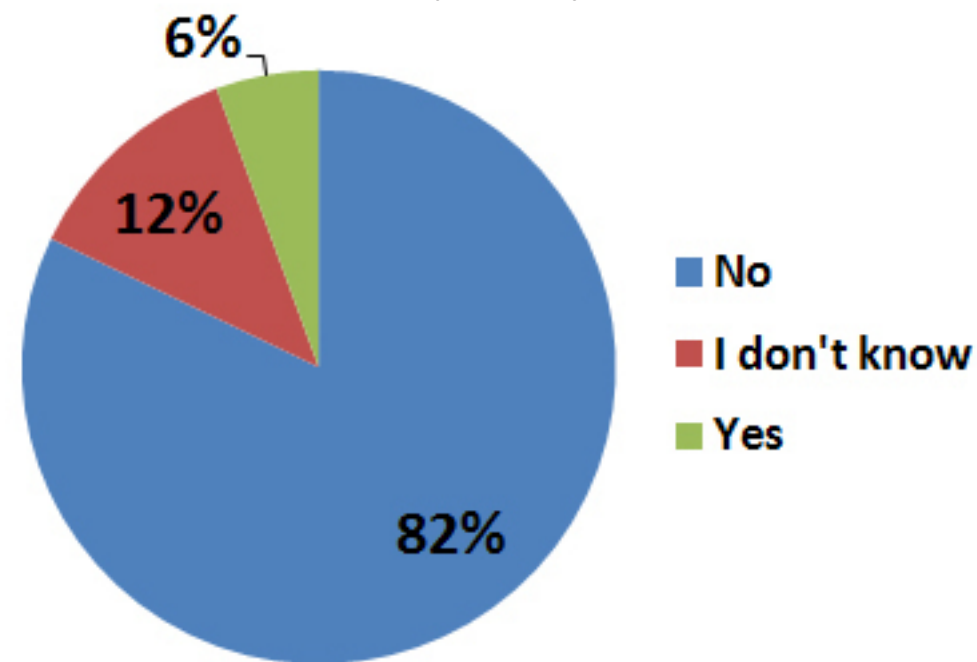


When certifying faculty, we ask their permission to post a student survey about the Green Teaching Program on their Blackboard course pages. The most recent surveys, distributed in fall 2012 and spring 2013, rendered a survey sample of 758 students. These are some examples of what they have to say about the Green Teaching Program:

Overall, how did you like the fact that this course was taught as a "Certified Green Course"? (N=757)



Did you feel that the "greenness" of this course in any way impaired your learning? (N=750)



What were your most positive experiences with this course as a "Certified Green Course"?

"I like that paper was not wasted for assignments and that readings or class powerpoints are available online and not required to be printed. The class was more efficiently run than non-green courses."

"Having an online textbook was scary to me at first, but I ended up really liking the portability and accessibility it provided me."

"It was easy to submit papers online through Blackboard without having to waste paper and money to print them out."

"I liked the online quizzes and tests, because you could get your results immediately."

What were your most negative experiences with this course as a "Certified Green Course"?

"It was hard to access resources when not by a computer."

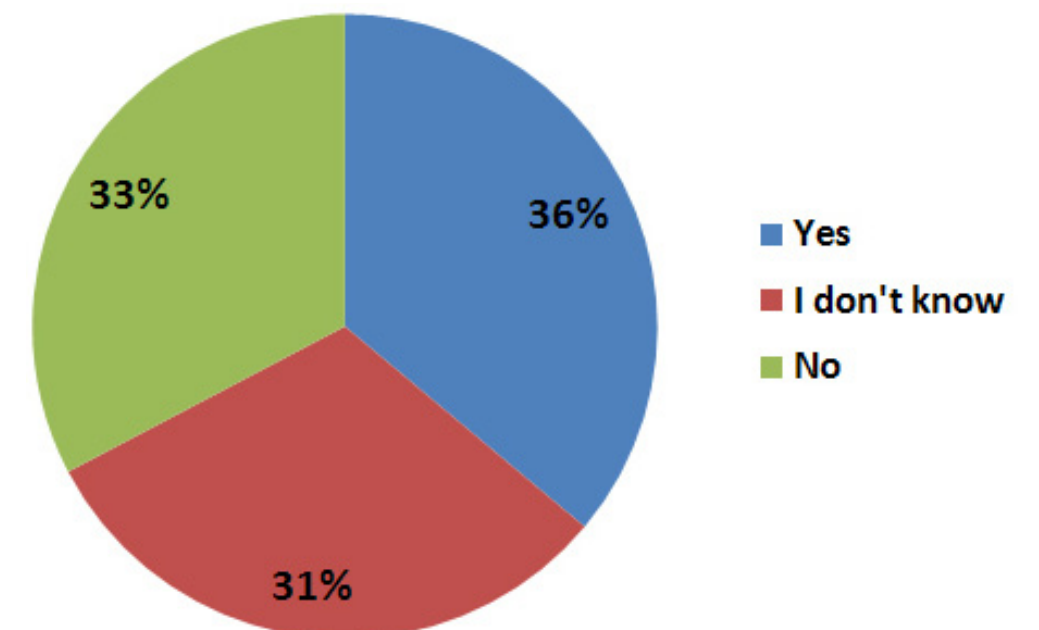
"Reading long essays on the computer could sometimes hurt my vision."

"I still like to have something that I can fold, highlight, or keep notes in the margins."

"Since everything was posted online, I was not motivated to go to class."

"Sometimes blackboard would have technical problems, making it difficult to turn in assignments."

If you were making a decision between two equally preferred courses, would you choose one course over the other if it were a Certified Green Course? (N=740)





What Professors Think



"I have always tried to be sensitive to the environment and serve as a role model (especially given that I am training current and future educators), so it's refreshing to see that others at AU have taken the initiative to encourage Green teaching across the campus."

*Nader Ayish
(Adjunct Professorial Lecturer, American University)*

"I am sure as the course goes along during the spring semester - I will realize other ways to be green - and so will my class.."

Leila Kramer (Adjunct Instructor, American University)

"This survey made me think about some additional things I can do to make my courses more green."

*Gregory A. Hunt
(Adjunct Professorial Lecturer, American University)*

"Just taking the survey, I was given several new ideas on how to improve my teaching practices and courses to make them even greener."

Aaron Besenecker (Assistant Professor, American University)

"I'd be interested to hear if the electronic-over-paper issue is really a resource savings. Seems to me if we encourage laptop use in the classroom over printing out assignments and syllabi that's still a significant use of energy."

*P. Kelly Joiner
(Writing Instructor, American University)*

"All we can do to remind students (and faculty) about sustainability is important!"

David Angelini (Assistant Professor, American University)

"I think this program is great as it encourages teachers to examine all aspects of their career in an effort to make them more environmentally conscious.."

Clarissa Olivarez (Adjunct Instructor, American University)

"Love the program! It has helped me rethink the way that I teach!"

*Elizabeth Cralley
(Adjunct Professorial Lecturer, American University)*

"A great program to make us good role models for our students. ."

*Elizabeth Keith
(Legal Rhetoric Instructor, Washington College of Law)*



Incentives and Rewards



For most professors, their personal commitment to teaching sustainably will be enough incentive to apply for a Green Teaching Certificate, but it never hurts to provide a little extra incentive, such as:

- A “Green Gift” (water bottle, lunch bag, tote bag, or donation)
- Events, such as the annual “Green Tea” where certified faculty can mingle and network with their colleagues
- Awards, such as the annual “Green Teacher of the Year Award”



Three of American University's Certified Green Professors pick up their rewards at the Fall 2010 Green Tea

Certified Green Professors are rewarded with a “Green Gift” every year. In lieu of a gift like the ones to the right, they can select to have a donation made in their name to a university sustainability fund.



The Green Teacher of the Year

During Earth Week every April, the Green Teacher of the Year Award is given to a faculty member who was certified during the year, and who in some way went beyond the regular certification requirements in innovative ways. The 2013 Award was given to Professor Kiho Kim because he pushes his students to examine the idea of sustainability on a real and personal level, by developing class projects that connect the ideas of sustainability to actions, thus greening not only his classrooms but, equally importantly, his students.



Scott Bass (AU Provost), Kiho Kim (Professor and Award Winner), and Anna Olsson (Green Teaching Program Director) (Photo: Jeff Watts)



Starting Your Own Program



To start a Green Teaching Program at your own university, the most important step is to connect to a group of committed faculty early on. You might target faculty who teach in environmental subject areas, or simply run an advertisement in your university's e-newsletter asking for volunteers. Once you have a core group of faculty who are willing to help develop and market your program, others will follow. It also can be of great advantage to connect to other sustainability groups and departments on campus, such as student environmental groups and the university's Sustainability Office.

The initial cost of starting a Green Teaching Program is limited to some time invested by one committed individual. Since the program is largely driven by the participation and actions of faculty, and since it is designed to utilize software and networks already existent at most universities, the cost is minimal once the program is in place. In fact, since most of the measures encourage a reduction of the use of resources such as energy, paper, and printer/copier cartridges, it is highly likely that a true cost/benefit analysis of such a program would produce a net benefit.

Logistically, the certification process can easily be run using your university's Course Management Software (such as Blackboard), an external survey tool (such as SurveyMonkey) or another platform that is integrated with the university system (AU uses SharePoint). The advantages of using SharePoint or Blackboard include the ability to grade the survey automatically and providing extra incentive for faculty to use and explore online tools.

For more tips on how to start your own Green Teaching Program, please visit our website and/or contact us directly (see contact information below).





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