



DIFFERENTIAL TUITION REQUEST

College/School: Engineering **Department/Program:** All
Contact: Joseph L. Cecchi Phone: 277-5522, 239-0176 Email: cecchi@unm.ed

Level: Undergraduate Graduate

Proposed Differential to be applied as: by student type (major): by course:
For Main Campus units, all new differential tuition will be charged by student type (major) and will follow the tuition block.

Requested Differential Tuition (shown as an amount per student credit hour):

Student Type	Current Differential	Proposed Differential	Increase/Decrease or New Differential
Residents	\$0.00	\$15.00	\$15.00
Non-Residents	\$0.00	\$15.00	\$15.00
Other	\$	\$	\$

Effective Academic Year: AY2015-16

*If the differential tuition request is approved it will be applied in the following academic year **beginning in the fall semester.***

Rationale for Request: *Please provide a detailed explanation on the reasoning for the increase/decrease or new differential tuition. Please refer to policy **UAP 8210 2.2** for qualifying justifications for differential tuition.*

Over the past number of years, the revenues of the UNM School of Engineering have not kept pace with our rising costs, nor with the revenues of our peer institutions, both in the region and around the US. As a consequence, the School of Engineering is facing increasing difficulty in continuing to deliver the high quality engineering and computer science undergraduate education that our students deserve. As well as, the School is finding it increasingly difficult to remain competitive with our peers, particularly in our ability to recruit and retain outstanding faculty who are the backbone of School and its programs.

The undergraduate professional engineering and computer science programs in the School are accredited by one of the accreditation commissions under the Accreditation Board for Engineering and Technology, Inc. (ABET). Our professional construction management program is accredited by the American Council for Construction Education (ACCE). Such accreditation provides assurance that our undergraduate engineering, construction management, and computer science programs meet the quality standards established by the profession for which



the program prepares its students. This accreditation is a major reason why engineering and computer science salaries are the highest among all undergraduate majors. (See details below.)

Our accreditation mandates measures and outcomes that require significant financial investment to establish and maintain. For example, ABET accreditation requires a number of laboratory courses in each of the School's disciplines. Such laboratory courses require expensive equipment and focused one-on-one interactions with faculty and teaching assistants. As well, the School provides extensive, detailed advisement for students to ensure they are able to navigate the ABET-accredited and ACCE-accredited curricula, with their respective large number of required courses. The School of Engineering has recently taken on more than 600 new beginning students, thus increasing the advising load.

Recently the School of Engineering has implemented some innovative new approaches to undergraduate education, for example, the new ENG 120 course, which accelerates students through their math background and allows earlier entry into courses that formerly required calculus. The initial indications are that this is increasing student success. At the same time, ENG 120 requires more instructional resources, e.g., more teaching assistants and laboratories.

An important part of the picture is that engineering and computer science graduates will be well-positioned to secure high paying jobs when they graduate from UNM. The National Association of Colleges and Employers (NACE – www.nacweb.org) published a salary survey in April 2014 for new college graduates, based on February 2014 data.

(www.nacweb.org/uploadedFiles/Content/static-assets/downloads/executive-summary/2014-april-salary-survey-executive-summary.pdf) The undergraduate discipline with the highest starting annual salary was Engineering, with an average of \$62,719. The second highest average annual starting salary was for Computer Science at \$61,741. The overall average annual starting salary for all majors was \$45,473, showing that averages for Engineering and Computer Science exceed the overall average by more than \$17,000/year and \$16,000/year, respectively.

The financial website, ThinkAdvisor (<http://www.thinkadvisor.com/index.php>), in their *30 Best Paying College Majors: 2014*, (www.thinkadvisor.com/2014/05/27/30-best-paying-college-majors-2014?page_all=1), published May 27, 2014, lists all of the UNM School of Engineering majors as among the top 16 highest salaries, with an average starting salary over the UNM Engineering and Computer Science majors of \$62,914, closely matching the NACE results. Also of interest, ThinkAdvisor's average mid-career salary for 2014 was \$105,257, indicating that engineers and computer scientists can anticipate significant increases in salary over their careers.

Market Analysis: *Please provide detailed information on whether the college/school or department/program cost of instruction is markedly higher than the university average program costs or market conditions warrant additional tuition.*

Like other professional programs, the cost of instruction in the School of Engineering is substantially greater than the university average. In part this reflects the demand of accreditation, described above, which includes things like laboratory courses, student projects, and capstone design. Faculty salaries in the School of Engineering are also higher than the average UNM salary, due in part to competition with other universities in the adjacent states and around the US, as we hire nationally. In fact, the School's Engineering and Computer Science programs are among the only professional programs at UNM that do not have differential tuition.

An indication of the higher costs for engineering programs can also be found in the attached tuition comparison with UNM's 22 peer institution. The current average differential tuition for engineering in those universities is \$1,691, which translates to 21% of an increase over the base tuition among our peers.

Student Consultation: *A preliminary request should be submitted to the Provost Office (Main Campus) or Chancellor's Office (Health Sciences Center (HSC)) no later than October 1st. Per policy it must be posted to the unit's website no later than October 1st to allow for at least 30 days of constituent comment prior to final submission to the Provost or Chancellor by November 1st.*

Please provide an explanation on how you plan to communicate the proposed differential tuition request to students, and the feedback you have already received from students on this request, if any.

The feedback that we have received thus far has been in support of the proposed \$15/credit hour differential tuition. While no student likes to pay more for his/her education, the students we have spoken to so far understand that the proposed differential tuition is essential for the School to maintain and increase the quality of our undergraduate programs, and that the students will benefit from the increased value.

Going forward, we will provide undergraduate students with the reasons the School is seeking the differential tuition and the value that this will bring to their programs. This information will be sent by email. As well, we will host in-person sessions.



Accountability/Budget Information: *Please provide budgetary information about how the revenue generated will be expensed. It is highly encouraged to set aside a portion of the revenue generated by the differential for financial aid (see policy UAP 8210 2.2.2).*

Financial Aid Set Aside Amount: 20 %

Proposed Annual Revenue

Differential Tuition (per student credit hour)	\$15
Projected # of Student Credit Hours (<u>all student credit hours</u> taken by student majors in the program).	60,000
Total Revenue	\$900,000

Proposed Annual Expenditures

Financial Aid Set Aside (%)	\$180,000
Faculty Expense	\$250,000 (including Lecturers)
Advising Personnel	\$100,000
Support Staff Expense	\$300,000 (Teaching Assistants and Tutors)
Operating Expenses	\$70,000
Total Program Costs	\$900,000

Please provide a detailed explanation on how the revenue will be used for this program:

The general allocation of revenues will follow the above table, “Proposed Annual Expenditures,” with the understanding that some flexibility will be necessary to best accommodate the actual needs as they arise. 20% of the revenue (estimated as \$180,000) will be devoted to need-based financial aid. Faculty expenses will include ~\$300,000 for new undergraduate instructors, including, for example, those teaching in the new ENG 120 sequence. Additionally, ~\$100,000 will be allocated for retention of outstanding faculty. ~\$200,000 will be used to hire additional teaching assistants where need has arisen, for example in the ENG 120 sequence. ~\$60,000 will be devoted to each of advising and undergraduate student projects (listed as “Operating Expenses” above).

Student Access and Affordability: *Please explain how student access and affordability will be addressed.*

We will maintain student access and affordability by dedicating 20% of the increased revenue from the proposed differential tuition to need-based student aid. As well, each of the engineering and computer science undergraduate programs has reduced the required number



of credit hours by approximately 5%, which will allow students to complete their undergraduate degree programs with fewer required courses.

Peer Comparison Chart: *Please complete the Excel peer comparison spreadsheet. If the peer institutions listed does not have a similar college/school or department/program add an institution that most closely resembles your unit. Please note this adjustment below.*

A peer comparison chart is provided for comparing undergraduate resident tuition for Engineering. The current (AY14-15) tuition base (and engineering tuition) at UNM is \$5,006/year, assuming 15 credit hours/per semester. The current average base tuition for our 22 peers is \$7,966/year, exceeding UNM's base tuition by \$2,960, or 59%. The current average engineering tuition for our 22 peers is \$9,657. This exceeds UNM's current engineering tuition by \$4,651, or 93%. In fact, UNM's tuition for engineering is lower than any of the 22 peers.

The proposed differential tuition for the School of Engineering of \$15/credit hour translates into \$450/year for two 15 credit hour semesters, compared to an average differential tuition for Engineering among our 22 peers of \$1,691. Using the current base tuition, the \$450/year differential tuition translates into a total Engineering tuition at UNM of \$5,456, which is still lower than any of our 22 peers. This differential tuition represents an increase of about 9%, as compared to the average differential tuition of our 22 peers of 21%.

Including the proposed \$450/year differential tuition for Engineering, the total proposed Engineering tuition of \$5,456/year is \$4,201 less than the average Engineering tuition of our 22 peers. The average Engineering tuition of our 22 peers exceeds UNM Engineering tuition including the proposed differential tuition by 77%.

By all of these measures, even with the proposed \$450/year differential tuition, the Engineering tuition at UNM remains substantially lower than the average Engineering tuition at our 22 peer institutions.

Other Information: *Please provide any additional information that supports this request for differential tuition.*

Dean/Director Approval:

Printed Name: _____ Joseph L. Cecchi November 3, 2014 _____

Signature: _____ Date: _____



Office of the Dean

Memorandum

TO: Chaouki Abdallah, Provost and Executive Vice President for Academic Affairs

FROM: Joseph L. Cecchi, Dean 

DATE: February 11, 2015

RE: Student Feedback on the SOE Undergraduate Differential Tuition Proposal

Dear Chaouki,

I provide herein a progress report of the undergraduate student feedback the School of Engineering Chairs and Deans have obtained as of this point in time for your report at the next Regents' Academic/Student Affairs & Research Committee meeting.

Given that the School of Engineering presently has over 2200 undergraduate students, the School's Leadership Council (Chairs, Dean, and Senior Staff) elected to follow a staged process that includes: (1) initial meetings hosted by chairs and deans with small-to-moderate sized groups of students (i.e., "focus groups") to understand the students' points of view and what they see as major issues; (2) hosting two School-wide "town hall" sessions for all undergraduates, scheduled for noon to 1 pm on Wednesday, February 18, 2015, and Thursday, February 19, 2015, at which I will make a Power Point presentation of the proposal and engage in open discussion; and (3) conducting an online survey after the town hall sessions to obtain more detailed feedback from the students.

This memo summarizes what we have learned from step (1) in the process. Indeed, the initial feedback we obtained is very valuable and surfaced issues that we had not foreseen. As well, the initial feedback indicates that, generally speaking, the students understand the need for increased revenue that our proposal set forth, as well as general agreement on the proposed expenditures from the differential tuition as outlined in the proposal. The observations from these initial meetings are as follows:

Meeting with Civil Engineering Undergraduates to discuss the differential tuition proposal
Professor Mahmoud Taha, Chair of Civil Engineering
2/6/15

I met with 9 students from ASCE today at 2:00 pm. They were leading students and they will communicate with others. I made a presentation to the students with the slides less the last as discussed. I also told them as we talked about our hiring of a new structural faculty as we discussed issues on faculty recruitment and hiring and they were impressed that we received 150 applications for our open position. I used it as a gesture to the quality of the program we have.

The general feedback from students is very positive. Here are some specific feedback and my answers/comments on them below.

- 1) Most of the programs we show to compare differential tuition with are Masters not?
 Answer: correct but BS is the degree required for licensure in Engineering and those other programs offer degrees required for licensure. We are on a similar situation for needs for accreditation to ensure licensure. Please also note we are requesting \$15 per credit hour, MS programs requests \$200-300 per credit hours.
- 2) How are you taking care of students who cannot pay and making sure that increase does not push students away of engineering?
 Answer: 20% of the money going back on financial need basis and that shall cover this category.
- 3) For how long will that increase be before you can increase it again?
 Answer: I do not know but I guess about 5 years. Please do not quote me on this. We need to check UNM policy but I think it will be a few years before we can raise it. I can check and let you know.
- 4) Any increase is an issue in a poor state as New Mexico and can affect enrollment.
 Answer: This is why we emphasize that we have 1/5 of the money to go back to students in financial aid scholarships.
- 5) Is that for all civil engineering courses, all engineering course or all other courses as well
 Answer: all courses you take once you declare engineering as major will see that increase.
- 6) I think this is very low raise in tuition compared what you can ask for and to what I thought when I heard there might be a tuition raise.
 Answer: I agree but SOE leadership thought much about the amount and the financial situation of students and a decision was taken to keep it minimal to fund necessary needs that we pointed out.

7) A raise in SOE tuitions might not be bad as people feel more of value when they pay a little more for a valuable professional degree.

Answer: Good

8) What is the university procedure to approve this?

Answer: SOE and UNM administration need to make sure that is not against the will of the students. That is why we are having this discussion and look to hear from you in the online survey. We are trying to explain to you all the rationale behind requesting this differential tuition. At the end of all discussions, it shall go to the regents for approval.

9) Is the Lottery scholarship still in place or not? Is it declining?

Answer: Yes it is still in place but might be different than what it was years ago. (Note: no question was said relating this raise or tuition to lottery scholarship so I did not volunteer answers).

10) General agreement that such limited increase seems necessary and convincing. Two were very vocally supportive of it.

Answer: Thank you.

11) I support it as the money stays in SOE as you clearly need it and people want to see a difference when they pay additional fees. That will be possible with that raise.

Answer: Yes. If approved, you will see more TAs, tutors and personnel for advising. You will see the difference.

There was a very general agreement and ease knowing that \$300k (1/3 of the money) goes to TA and tutoring needs.

I also told them I am available to discuss with any other students who like to discuss with me in the next few days or who have any objections or comments to this proposal. I also informed them of the two sessions by the Dean on the 17th and the 18th in the auditorium with lunch and the need to take the online survey with a chance to win an IPAD. I confirmed that SOE chairs and the Dean are really interested to hear their feedback.

**Report on Presentation to ECE Students Regarding Proposed Differential Tuition
Professor Chuck Fleddermann, Associate Dean for Academic Affairs
2/9/15**

I met this morning with students from my ECE 213 class regarding differential tuition. I had announced via email on Sunday afternoon that after today's class, I would give a short presentation on the differential tuition proposal and answer questions for any students who wanted to stay for a few minutes. Thirty students stayed after class to hear the presentation and offer feedback.

Since this is a sophomore level required class in the EE and CompE programs, most of the

students present were early in their career at UNM, most of them still in pre-major status and not yet admitted to their degree programs.

Overall, there was very little comment from the students. They listened attentively and asked a few questions during the presentation. From body language and facial expression I didn't get an impression of opposition to the proposal. I did have several students nodding when I discussed the need for more TAs, instructors, and advisors. I also didn't get too many questions or much discussion afterwards, despite efforts to evoke a response.

Some specific questions/comments from students:

- 1) There was concern about whether scholarships and Pell grants will cover differential tuition. I told them that in general scholarships can cover this, but it is hard to predict since each student presents a unique situation with differing needs, differing scholarship sources etc.
- 2) One student asked how they could find out if differential tuition would be covered in his case; I referred him to financial aid. I pointed out that the 20% of differential tuition set aside for scholarships was intended to minimize the impact of the proposal on our neediest students.
- 3) One student said that he would be in favor of the differential tuition as long as it didn't hurt needy students and force them to leave SOE.
- 4) One student inquired as to whether there was a mechanism for revoking the differential tuition if it wasn't leading to the improvements in student services that I discussed. In a similar vein, a student asked if once this was approved, were we then able to just increase the differential component every year. I responded by saying that the UNM policy is that differential tuition has to be renewed periodically; I said either every 3 or 5 years. So if it isn't effective, students will have the opportunity to weigh in on eliminating the differential when it is up for renewal. I also told them that we currently are not planning any increase in the differential, and any increase in differential tuition would require the same approval process with input from students and approval by the regents.
- 5) One student asked whether our goal was to stay at the bottom of our peers in engineering tuition, asking why we weren't asking for a higher differential. I explained that the proposed differential was not determined by trying to be at the bottom of the peers, but rather by looking at the needs of the school and setting the differential at an amount that we felt would make a significant impact on undergrad education without imposing undue hardship on our students.
- 6) Towards the end of the discussion, one student spoke up to say that the dollar amount of the differential seemed reasonable, especially compared to the potential benefits. Several students nodded their heads in agreement.

- 7) Another student said that he was in favor of this since he felt it would enhance the value of his degree. Also some agreement thru nodding of heads.
- 8) There was also a question on timing- when would it be up for approval by the Regents, and when would it go into effect if approved. I explained the timeline on approval and told them that it would be effective beginning in the fall.
- 9) No one spoke up in opposition to the proposal.

Report on Presentation to NE Students Regarding Proposed Differential Tuition
Professor Anil K. Prinja, Interim Chair of Nuclear Engineering
2/9/15

I met with two separate groups of students, about 12 juniors in my class last Thursday, Feb 6th, and 15 sophomores in a colleague's class yesterday, Feb 9th. The two groups represented a relevant cross section of students, and they would be the first to be affected by the introduction of differential tuition if enacted by Fall 2015. I did not use a PowerPoint presentation but talked through the salient points provided by Dean Cecchi and gave each of them a copy of the page listing the website hosting the presentation and the dates of the pizza town hall.

Both groups were quite engaged and several readily expressed opinions and asked questions. I did not notice concerns that were representative of one group over the other. In general, the most passionate voices were in support of the increase but some expressed strong concerns, and even some sarcasm. Several of the quiet students nodded frequently when views were expressed either for or against, but particularly when I talked about the need to be competitive to retain outstanding faculty. This latter point seemed to resonate with students.

Comments/questions from students favorable to the differential tuition:

- 1) One student wondered why the increase was so small and why we didn't "quadruple it". If we want to be competitive and retain our faculty then the increase may not be sufficient. Several students nodded their heads in agreement. I said that was a good question and that the decision on the amount was reached after carefully balancing the need to deliver quality engineering education while minimizing negative impact as a result of financial hardship.
- 2) Another student commented that investment to retain good faculty would mean the faculty would be invested in students' education. Other students verbally reinforced this view.
- 3) Students were pleased to hear that the entire differential tuition would be returned to SOE and invested in expanded advising services, TAs and graders, and faculty. One student felt strongly that more lecturers should be hired.

- 4) One flippantly remarked, "I don't care, the taxpayer is paying for it." While he did not elaborate, I suspect he was referring to the lottery scholarship covering any increase. I thought it best not to respond.

Comments/questions from students concerned about differential tuition.

- 1) When I talked about the fact that UNM's tuition was the lowest in our peer group and that it would remain that way after the proposed delta, one student commented that keeping the tuition low was what attracted out-of-state students like him, and another remarked that most students at UNM are not from "wealthy families". Others nodded in agreement, indicating to me that this was a broad concern. I explained again about the higher cost of educating engineers, maintaining infrastructure, providing state-of-the-art laboratory equipment, recruiting and retaining excellent faculty, and the returns in investment through well-paying jobs. No one argued with these points but a sense of resignation to the inevitable appeared to prevail.
- 2) One student expressed concern that nuclear engineering was her second degree, which made her ineligible for any financial aid. She was working two jobs already to support herself through college and stated that further increase in tuition may force her to extend her graduation date if not drop out. This was the strongest expression of opposition to the differential tuition expressed by any student. I reiterated that hardship cases like hers is precisely the reason for the 20% set aside.
- 3) Another remarked that he too had a job and a family he was supporting and although the increase would probably be manageable he was skeptical of the need to introduce differential tuition at this time. I remarked that increasing tuition is always a difficult decision that is forced by the realities of the increasing cost of higher education but never taken lightly. I again went over the long-term benefits of an engineering education but this elicited a sarcastic remark from one individual: "Really, you're going to increase the tuition just because you think we will be able to afford it later?" I did not pursue this further.
- 4) Following up on the previous comment, another student asked how soon before the differential would be bumped up, sardonically adding that "once administrators get a taste for increasing tuition it doesn't stop rising". I explained that while it was unlikely to be increased within 5 years, any increase would have to be approved by the students in any case.
- 5) One student asked how differential tuition would affect her tuition remission as she was also a UNM employee. I explained that I thought the increase would be covered by the tuition remission for the number of semesters of eligibility but that I wasn't sure and that the Bursar's office would make the determination.

- 6) Another asked if her scholarship would be increased or if it would have to be stretched to cover the differential tuition. I said that it would depend on the type of scholarship but that the financial aid office would be able to clarify.

CS Tuition Differential Focus Group Meeting
Professor Michalis Faloutsos, Chair of Computer Science
2/9/15

Students had questions about how much the CS department would get and how the distribution from Dean's office would be determined. They felt that the demands for jobs are in CS so these funds should be used to increase/support CS undergraduate enrollments. Some concern about undeclared students and students that are not yet in SOE departments. Better explanation of new pre-major issue may be good. They all liked the idea of using funds for financial aid and suggested it be used for both need based and merit based scholarships. Felt it was important to recognize those students doing well.

Asked about use of funds for equipment needs of department, our students stated CS does not need big equipment like other departments so concerned we will not get our "share" of funds. Expressed need for larger computer lab for our students in addition to space to build sense of community for undergraduates. We asked if these funds could be used for these purposes and felt this should be presented in a positive light, including our accreditation and the high quality education from CS. We emphasize what can be done with the funds rather than focus on need for more money in current state.

All felt this differential was too low and that a larger increase would be acceptable and affordable given people can make good money with a CS degree.

Differential Tuition ECE Focus Group
Professor Jane Lehr, Chair of Electrical and Computer Engineering
2/10/15

I met with 12 students from ECE yesterday from 11:00 AM to 12:15 PM. These students were a mix of IEEE students (mostly juniors), a few sophomores who work in the department, a freshman and a number of students who were recruited by Rich Compeau. The presentation was given without the last slide as directed. The feedback from students was positive. My computer chose the start of the presentation to perform a *critical update* so I introduced the subject of differential tuition *ad lib*. I said that the SOE was proposing the differential tuition to improve the undergraduate curriculum. I said that I thought the most pressing needs in ECE was for more TAs and what I have called "Peer Mentors". I relayed how last semester I hired an UG student to help other UGs (outside of class) with their lab assignments. The experiment has been very successful and I am expanding it by hiring additional Peer Mentors.

We then discussed the Master Schedule and how we wanted to use it to determine the number of TAs we needed with a proposed metric of approximately 30 students/TAs. This way we would figure out how many TAs we need. The problem with this rational approach is the department budget process and at the start of the year we have a negative balance. The extra funds from the differential tuition would help pay for what we need as opposed to what we can afford. One student asked about the state funding formula and that was briefly discussed. I explained the problem of faculty retention to keep the best people in ECE. I explained why an accreditation is so important as is the fact that UNM is a Carnegie designated Very High Research Activity institution and ECE is a very active research department which trickles down to the UG program. It is important for students' success in the professional field.

Finally, I brought the emphasis back onto the UG program by discussing the importance of providing our students with a firm foundation in EE and Comp E by focusing, for instance, on the Circuits I & II sequence. First, we assign outstanding teachers (Fledderman and Compeau). We just arranged the schedule so that students take Cir I and Cir II with the same professor. For the next semester, we are considering adding another section so that the class size can be reduced to ~ 60. The students agreed that providing this firm basis in the curriculum was the right approach.

Here are some specific feedback in red and my answers/comments on them below.

- 1) There was a concern about losing students to Andersen or Arts & Science due to lower tuition.

Answer: Anderson already has differential tuition and the amount of the increase is relatively small. Moreover, if we have a great program, we will attract students. No, I do not think that Andersen or Art & Science are a threat to the School of Engineering.

- 2) Is tuition differentiation only in ECE?

Answer: No, the whole SOE will have differential tuition. The University has a policy in place with which we will have to comply.

- 3) Does this affect graduate students?

Answers: No, the differential tuition is only on the UG curriculum and the money will be spent only on UG.

- 4) How were these peer institutions chosen? I think the data was skewed due to University CA. Why isn't NM Tech included in this list?

Answer: This list was composed by ADAA Fledderman and I expect there is a criteria for "peer institution" which I don't know off hand. I pointed out that these were public institutions. As for UC Riverside, it is a good peer. But yes, CA is more expensive in every aspect, but UNM is cheaper than anybody else. I stated that I was not sure why NM Tech isn't listed.

- 5) Will this money go mostly for faculty salaries? Does it mean that faculty get hired or retained?

Answer: I do not anticipate a large need in ECE for faculty retention at this time. The more

pressing need is for more faculty positions. We are trying to grow our UG population.

- 6) How or do we have a guarantee that the money goes to the suggested purpose?
 Answer: I expect a policy will be put in place similar to the Curriculum Fees where the money can be spend for dedicated purpose per policy and student input. This would be a good role for a Student Advisory Panel. . I also expect that the Differential Tuition money generated in ECE goes to ECE.
- 7) Would the state reduce money?
 Answer: The state has a formula for how money is allocated. The funding from the state and that generated by tuition should remain the same. That funding is separate from this tuition money.
- 8) Does this solve the problem? How do we know that this is the right amount of money?
 Answer: The SOE tried to strike a balance between getting additional funds to support our programs while not crippling the finances of the student population. This money will go a long way to solving the problem.
- 9) Will there be an increase? Is this a slippery slope where our tuition will double?
 Answer: Certainly not in two years, but in 10 years maybe. This is likely to be similar to Curriculum Fees where it was judiciously increased a
- 10) Does this tuition solve the faculty problem?
 Answer: It helps, but how many TA's do we really need? And this money helps solving the TA challenge.
- 11) Is it already decided, how would you feel about student input?
 Answer: This is not decided yet. We are proposing it to the Regents who have to approve it. Student input is a very important part of the process. We want your feedback and we want to know where you think we need to invest in ECE. And no, it is not a done deal.
- 12) ECE does not waste money. What is the university doing about programs like Football?
 Answer: This money will not go to support the football team etc. It is specifically for SOE and the Departments. This is independent of University priorities.
- 13) Is there a set list of priorities?
 Answer: No, this is a brain storming stage.
- 14) When students go into ESS does everybody pay the Differential Tuition or only on ECE course? Does the money go to ECE?
 Answer: Per UNM policy, if a program has a Differential Tuition, then it is charged on every course that the student takes once the major is declared. Every department in the SOE will charge Differential Tuition. I expect that the money generated from ECE student credit hours will go to ECE.

15) Does anything of this go into training prof. how to teach? (Laughing.) Are there basic lecturing techniques?

Answer: No, but there are IDEA scores, and training is offered through UNM, some of it is self-motivation. Peer review teaching style would be good.

16) Does the money go to equipment?

Answer: No that is what Curriculum Fees are for.

17) Does this money give students leverage to say where it goes?

Answer: Yes, I like the idea of having a formal Student Advisory Board that meets regularly and can serve as a formal forum for student input.

Additional Comments (Lehr): I was surprised at what made an impact. Since my computer was updating and was just speaking ad lib, I told them about the department budget: “at the start of the fiscal year, we are given our allocation that is below our projected expenses. That is we start the year “in the hole” which makes it hard to plan for things like TAs.” I went on to tell them that our program was augmented through buyouts from research, etc.” This seemed to resonate with the Focus Group and immediately put them in a more understanding frame. I had a couple of nontraditional students who asked most of the jaded questions. Their fear was mostly that this would be approved and then they would be subject to the whims of the powers that be. I might suggest making the analogy with Curriculum Fees and how it was increased by X dollars in Y years and how Differential Tuition would be the same. It would be very good to add in how our Peer Institutions were derived or chosen.

**ME Student Advisory Board Meeting RE Differential Tuition Proposal
Professor Chris Hall, Chair of Mechanical Engineering
2/10/15**

The ME Student Advisory Board is comprised of 20 students from sophomores through doctoral candidates. The original formation of the board was by invitation, based on recommendations from the faculty. I met with 13 of these students on Monday February 9, 2015, specifically to present the Differential Tuition Proposal and to solicit their feedback. Our meeting lasted about 75 minutes and all of the students were engaged in asking questions and in offering support and suggestions.

I gave the presentation as provided. There were only a few questions during the presentation, and they were typically of the nature “will you be providing *this* information?” After the presentation, we spent the remainder of the time discussing the proposal, its benefits, its implementation, and its relationship with other fiscal elements including Lottery Scholarship, curriculum fees, and alumni and corporate giving. The nature and detail of the students’ questions and comments are enumerated below.

- 1) The students were universally in favor of the proposal and appreciated that it would benefit future students significantly. They were certain that the proposal will be well received and that it will be approved.
- 2) The first question was: *why not propose a larger differential tuition?* I explained that the leadership had discussed this question and had decided on an amount that would benefit students without creating a substantial new burden. All of the students agreed that a larger differential tuition rate would be justified, and all agreed that they believe this proposal will be successful.
- 3) Most of the students were *excited* about the school's initiative and its evident benefits to the undergraduate education program. The fact that the funds would return directly to the School was especially well-received. Furthermore, the graduate students (many of whom were our undergraduates) observed that it would be good for the graduate program as well, since improving the undergraduate program implies BSME graduates who are better prepared for and interested in pursuing a graduate degree.
- 4) Students were interested in how the funds would be dispersed within the School. I told them that the sample budget would be developed in much greater detail with input from all departments. There was a strong appreciation for a School-level strategic approach, but also a consensus that a significant fraction of the funds should be spent in proportion to undergraduate enrollment in specific programs. As one student put it:
"I think it would be beneficial if the disbursement of the funds was in some way proportional to the enrollment for each department. I understand that the idea is not to split all the proceeds from the differential tuition according to the number of students in each department; however, it seems fair that enrollment be taken into account when allocating the funds."
- 5) The question of Lottery Scholarship coverage was raised and I stated that the Lottery Scholarship does not cover differential tuition. There was a brief discussion and the students agreed that the set-aside for need-based scholarships clearly addressed this concern and were satisfied that the School was taking this concern seriously.
- 6) Students were interested in the faculty hiring split between tenure-track professors and lecturers. The consensus was a recommendation that preference be given to hiring lecturers so that there's a possibility of reducing class sizes and offering more electives. One student did state that lectures need to be more engaging and wanted to know how the proposal would address this issue. My response emphasized that while class size reduction could address the issue, this concern would be a topic for our next Student Advisory Board meeting.
- 7) Students were particularly enthusiastic about the prospect of additional TAs, emphasizing that the quality of the hands-on experience in laboratory courses is inversely proportional to the number of students in a section. The graduate students who had been TAs

concluded.

- 8) A student asked if the amount of donations to the department from corporations and alumni would in any way affect the distribution of the Differential Tuition. I responded that such donations usually are restricted to uses specified by the donors, and would not ordinarily be considered in determining the use of Differential Tuition.
- 9) Several students asked about the possibility of introducing an Aerospace Engineering option. I explained that the addition of a new degree would be a much larger effort, but that I would convey the interest.

Student feedback from CBE
Professor Abhaya Datye, Chair of Chemical and Biological Engineering
2/11/15

I went to the junior and sophomore classes and explained briefly the general outlines of the differential tuition proposal. I did not entertain any questions but asked students to come join me in a focus group discussion, which was held this afternoon.

A total of 12 students attended. They were generally supportive and some came prepared, had already looked up the proposal and had a lot of questions.

- 1) They are already paying \$15/credit hour course fee, why did we need this differential tuition. I explained that the curriculum fee covered different costs and we could not use it for TAs and grading.
- 2) How did we arrive at this number of \$15/credit hour, will it be sufficient to address our needs. I explained that it was a balance between our needs and the ability of students to afford it. I assured them it would make an impact. They wanted to know if this fee kicked in during fall 2015, would the department get additional resources and would it make a difference. I assured them that this is the only part of tuition that comes directly to engineering and the goal is to direct it to undergraduate education and that our department would get its fair share. They did want to know more about how this number came about and when I told them it could generate \$900k per year they were satisfied, but wanted to understand the budgeting assumptions that were made.
- 3) This second question led to a broader discussion of where tuition dollars go, how they are allocated and how engineering gets its fair share, also how athletics impacts the overall funding picture. I explained this is complex, but the overall budget is handled at the Provost level and hence is influenced by many factors, including keeping a balance between the different parts of the campus.
- 4) A significant question that came up concerned the fact that our tuition gets capped at 15

credit hours, so if a student signs up for 18 hours, they still pay the same. They wanted to know if the differential tuition would continue all the way linearly with every hour they sign up. My answer was that I did not know and that this would be addressed during the town hall meeting next week.

- 5) They asked if this was a revolving door, and could we come back with a request to increase this differential tuition next year. I replied that the process involves multiple steps of review, ending with a meeting of the board of Regents. Student input is solicited and considered. That in a few years (I said 3 -5 years) the fee would be reviewed and at that time could be changed, up or down. Some expressed interest in attending the meeting of the Regents.
- 6) The comparison with the peers solicited quite a bit of discussion. Some felt that the cost of living may be higher in the cities where our peers are located. Others felt that some of those schools may have strong football (UT) or basketball programs, which may be helping with the overall budgets. My simple answer was that in a state with higher costs, a student would pay a higher tuition, so they were getting a bargain, considering our education qualified them for nice, high paying jobs.

I used this meeting also to introduce the students to Holly Meyer our new program coordinator, who has taken over Jocelyn's job. Students were happy to meet her and went back generally satisfied and feeling good about the fact that we are focusing on using the funds to improve their education. A common sentiment was that they would like to see the extra revenue impact their education, as early as the fall semester. I reminded them about the town hall and the survey to come.

Dear School of Engineering Undergraduates,

Over the past few years, the revenues of the UNM School of Engineering have not kept pace with the rising costs of delivering high-quality undergraduate engineering and computer science education. At the same time, our undergraduate enrollment has grown to over 2000 students, necessitating increases in things like advisement and the number of teaching assistants. It has also become increasingly difficult to recruit and retain outstanding faculty, who are the foundation of excellence in the education we deliver to you.

As a result of all of this, the leadership of the School has made the very difficult decision to propose differential tuition for the School of Engineering. In fact, engineering differential tuition is the norm among our 22 peer institutions (<http://provost.unm.edu/documents/budget-planning/soe-unm-peer-comparison-final.pdf>), with 16 of them charging a higher tuition for undergraduate engineering programs compared to their base tuition. The average differential tuition among all 22 peers is \$1,691/year, on top of an average base of \$7,996, for a total of \$9,657. The current UNM tuition is \$5,006/year and is lower than all 22 peers.

Our proposal for differential tuition is considerably more modest than our peers. We propose a differential of \$15/credit hour, which translates into \$225/semester for the 15-18 credit hour block, or \$450/year for 30-36 credit hours.

By UNM policy, the entire amount of differential tuition collected by the School of Engineering will be allocated to the School, where it will be used only for undergraduate educational expenses, i.e., differential tuition will stay in the School. These new revenues would be used for need-based financial aid, as well as things like teach assistants (TAs), tutors, advising personnel, and lecturers.

I will be hosting two information meetings next week to meet with you to provide more details, answer your questions, and get your feedback. These will take place in the Centennial Engineering Center Auditorium (room 1041) on:

Wednesday, February 18, 2015, noon to 1 pm, and
Thursday, February 19, 2015, noon to 1 pm

After the information meetings, we will be sending you a link for you to provide additional online feedback on the proposal. You can find our complete differential tuition proposal at:

<http://provost.unm.edu/documents/budget-planning/soe-differential-tuition-request-form-revised-2-4-2015.pdf>

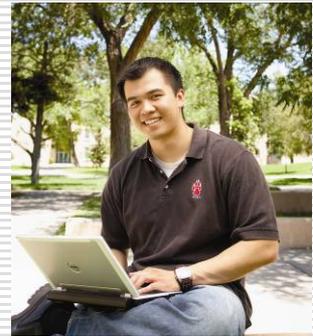
I look forward to seeing you next week at the information meetings.

Sincerely,

Joseph L. Cecchi
Dean, School of Engineering
Professor of Chemical and Biological Engineering
The University of New Mexico
<http://soe.unm.edu>



UNM School of Engineering Undergraduate Differential Tuition Proposal



Joseph L. Cecchi
Dean, School of Engineering
Undergraduate Student Information Meetings
February 18 & 19, 2015

Rationale

- The revenues of the UNM School of Engineering have not kept pace with the rising costs of delivering high-quality undergraduate engineering and computer science education
- For example, over 94% of the School's state budget is now allocated to salaries, leaving insufficient funds for operations
- At the same time, our undergraduate enrollment has grown to over 2000 students, necessitating increases in things like advisement and the number of teaching assistants
- It is increasingly difficult to recruit and retain outstanding faculty, who are the foundation of excellence in the education we deliver

Accreditation delivers value, but drives costs

- Our undergraduate engineering and computer science programs are professional programs accredited by the Accreditation Board for Engineering and Technology (ABET)
- Accreditation provides assurance that our undergraduate engineering, construction management, and computer science programs meet the quality standards established by the profession for which the program prepares its students.
- This accreditation is a major reason why engineering and computer science salaries are the highest among all undergraduate majors.

More on accreditation

- Our accreditation mandates measures and outcomes that require significant financial investment to establish and maintain
- For example, ABET accreditation requires a number of laboratory and design courses
- These courses require expensive equipment and focused one-on-one interactions with faculty and TAs
- As well, the School provides extensive, detailed advisement for students to ensure they are able to navigate the ABET-accredited curricula, with their respective large number of required courses

Our goal is to enhance undergraduate education

- This proposal is not about just maintaining the *status quo*
- Rather, this proposal will enhance the undergraduate experience by providing additional resources to undergraduate students, for example:
 - More Teaching Assistants and Tutors
 - More faculty, especially lecturers
 - More advisors to help improve graduation rates

UNM School of Engineering Tuition and Fees for AY 14-15

\$5,006 Base Tuition 30-36 credit hour block	+	\$1,440 Student Activity Fees* debt service, SHAC, Athletics ~ 75%	+	\$450 SOE Curriculum Fees instructional hardware, computers, software	=	\$6,896 Total Tuition And Fees
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- SOE Curriculum Fees were instituted 16 years ago at the current rate of \$45/engineering-computer science course as mandated by accreditation
- These fees are used for keeping instructional equipment and software up-to-date, but cannot be used for personnel costs

Methodology for Comparing to Peers

- All of our peers charge Student Activities Fees
- Most of our peers charge curriculum fees for engineering and computer science
- To make the most direct comparison between UNM and our peers, we compare:
 - UNM's base tuition with the base tuition of our peers
 - The proposed UNM School of Engineering differential tuition with the engineering/computer science differential tuition of our peers

This eye chart shows the undergraduate engineering tuition data for UNM and our 22 peers



The University of New Mexico

2015-16 Tuition Projections

College: School of Engineering

Program: All Engineering and Computer Science

<http://provost.unm.edu/documents/budget-planning/soe-unm-peer-comparison-final.pdf>

0%

Undergraduate Resident

Resident	Base Tuition (1)	Current Engineering Tuition (2)	Current Differential for Peer Engineering Tuition	Percent Difference	FY 2016 Projected Engineering Tuition @ G7 Increase	Proposed Differential (1)	Total Proposed Tuition
University of New Mexico	\$ 5,006	\$ 5,006	0	0.0	n/a	\$ 450	\$ 5,456
Peer Average	\$ 7,966	\$ 9,657	1691	21%	\$ -	n/a	\$ 9,657
Peer Median	\$ 7,992	\$ 9,377	1385	17%	\$ -	n/a	\$ 9,377
1 Arizona State University	\$ 9,484	\$ 10,284	800	8%	\$ -	n/a	\$ 10,284
2 Florida International University	\$ 2,522	\$ 6,108	3586	142%	\$ -	n/a	\$ 6,108
3 New Mexico State University*	\$ 5,950	\$ 5,950	0	0%	\$ -	n/a	\$ 5,950
4 Oklahoma State University*	\$ 7,442	\$ 8,732	1291	17%	\$ -	n/a	\$ 8,732
5 Texas A&M University**	\$ 8,882	\$ 10,448	1566	18%	\$ -	n/a	\$ 10,448
6 Texas Tech University	\$ 5,110	\$ 9,306	4196	82%	\$ -	n/a	\$ 9,306
7 The University of Tennessee	\$ 8,304	\$ 13,676	5372	65%	\$ -	n/a	\$ 13,676
8 The University of Texas at Arlington*	\$ 9,152	\$ 9,448	296	3%	\$ -	n/a	\$ 9,448
9 The University of Texas at Austin**	\$ 9,346	\$ 10,214	868	9%	\$ -	n/a	\$ 10,214
10 The University of Texas at El Paso	\$ 8,550	\$ 8,550	0	0%	\$ -	n/a	\$ 8,550
11 University of Arizona	\$ 9,576	\$ 11,376	1800	19%	\$ -	n/a	\$ 11,376
12 University of California-Riverside*	\$ 14,836	\$ 14,836	0	0%	\$ -	n/a	\$ 14,836
13 University of Colorado-Boulder**	\$ 9,048	\$ 12,048	3000	33%	\$ -	n/a	\$ 12,048
14 University of Colorado-Denver	\$ 7,536	\$ 7,536	0	0%	\$ -	n/a	\$ 7,536
15 University of Houston**	\$ 7,680	\$ 14,675	6995	91%	\$ -	n/a	\$ 14,675
16 University of Iowa **	\$ 6,678	\$ 8,824	2146	32%	\$ -	n/a	\$ 8,824
17 University of Kansas	\$ 7,638	\$ 10,306	2668	35%	\$ -	n/a	\$ 10,306
18 University of Missouri-Columbia*	\$ 10,286	\$ 10,286	0	0%	\$ -	n/a	\$ 10,286
19 University of Nebraska-Lincoln**	\$ 6,480	\$ 6,480	0	0%	\$ -	n/a	\$ 6,480
20 University of Nevada-Las Vegas	\$ 4,596	\$ 5,746	1150	25%	\$ -	n/a	\$ 5,746
21 University of Oklahoma-Norman Campus*	\$ 9,275	\$ 9,275	0	0%	\$ -	n/a	\$ 9,275
22 University of Utah**	\$ 6,888	\$ 8,348	1460	21%	\$ -	n/a	\$ 8,348

The majority of our peers have recognized the enhanced cost of undergraduate engineering education

- From the previous chart, out of our 22 peer institutions, 16 charge a higher tuition compared to their base tuition for undergraduate engineering programs
- In fact, the average tuition for undergraduate engineering programs for all 22 peer universities is \$1,691/year greater than the general tuition

UNM AY 14-15 UNM engineering tuition is substantially below the average for our 22 peers

Institution	Base Tuition/Year	Engineering Differential/Year	Total Engineering/Year
UNM	\$5,006*	0	\$5,006
22 Peer Average	\$7,966	\$1,691	\$9,657
Difference	\$2,960 (59%)	\$1,691	\$4,651 (93%)

- Range of peers: \$14,836 (UC Riverside) to \$5,746 (UNLV)
- Current UNM tuition for engineering is lower than any of our 22 peers

Proposed Undergraduate Differential Tuition

- In accordance with UAPPM Policy 8210:2.2, the School of Engineering proposes an undergraduate differential tuition of \$15/credit hour
- UNM policy is that differential tuition will be charged by student type (major) and will follow the tuition block
- The proposal translates into a differential tuition of \$450/year for 30-36 credit hours, i.e., the "15-18 credit hours/semester block" for students majoring in one of the School of Engineering's undergraduate programs

Comparison of (AY 15-16) UNM differential tuition to 22 peers (AY 14-15)

Institution	(AY 14-15) Base Tuition/ Year	Engineering Differential/Year	Total Engineering/Year
UNM	\$5,006*	\$450*	\$5,456
22 Peer Average	\$7,966	\$1,691	\$9,657
Difference	\$2,960 (59%)	\$1,241 (278%)	\$4,651 (56%)

This differential tuition represents an increase of ~ 9% above the base UNM tuition, compared to an average of ~21% for our 22 peers

With proposed differential tuition, UNM is still lower than any of our 22 peers

*assuming 30-36 credit-hours/year – the “15-18 credit hour/semester block”¹²

But how do we rank compared to our peers?

- Current (online) US News rankings for undergraduate engineering programs lists 13 of our 22 peers above UNM
- This puts UNM near the middle of our 22 peers as far as undergraduate engineering rankings
- This is well above where our tuition and fees (including differential tuition) are relative to our peers

More on national rankings for NM research universities from US News

Ranking Category	UNM	NMSU	NMTech
National University (Entire university)	189	>200	Regional, not national univ.
Undergraduate Engineering	91	109	139
Graduate Engineering	87	129	136

- UNM School of Engineering ranks significantly better than UNM as a whole
- Our undergraduate and graduate program rankings are significantly better than the two other New Mexico research universities

Engineering and Computer Science Average Starting Salaries are among the highest

According to the National Association of Colleges and Employers (NACE),* the highest average starting salary in 2014 was for Engineering, and the second highest was for Computer Science.

Undergraduate Major	Average Starting Salary
Engineering	\$62,719
Computer Science	\$61,741
Non-Engineering/Non-Computer Science	\$45,473
Difference	~\$16,000 - \$17,000

More on salaries*

- All of the UNM School of Engineering majors are among the top 16 highest salaries, with an average starting salary of \$62,914
- Also of interest, ThinkAdvisor's average mid-career salary for 2014 was \$105,257, indicating that engineers and computer scientists can anticipate significant increases in salary over their careers

The School's Engineering and Computer Science programs are among the few professional programs at UNM that do not have differential tuition

UNM Program	Differential Tuition/Credit Hour
Anderson School of Management (BBA)	\$10
College of Nursing - Bachelors	\$185
Anderson School of Management (MBA)	\$183.70
Speech and Hearing Sciences – Masters	\$150
Architecture and Planning - Masters	\$74.63
Law	\$352.34
Public Administration- Masters	\$50
Masters of Occupational Therapy	\$140
Physical Therapy-Doctorate	\$164
College of Nursing – Masters	\$249
College of Nursing – Doctorate	\$366

Proposed uses of the differential tuition

- All of the differential tuition revenues will be allocated to undergraduate educational expenses
- Actual allocation will depend upon budget needs, except for need-based aid which will be 20% of the total
- Here is an example of a differential tuition budget:

Category	Estimated Annual Expenditures
Need-based Financial Aid Set Aside (20%)	\$180,000
Teaching Assistants and Tutors	\$300,000
Advising Personnel	\$100,000
Faculty (including Lecturers)	\$250,000
Operating Expenses	\$70,000
Total	\$900,000

How does differential tuition work?

- By UNM policy, the entire amount of differential tuition collected by the School of Engineering will be allocated to the School, where it will be used only for undergraduate educational expenses, i.e., differential tuition will stay in the School for undergraduate instruction
- This is different than for base tuition and base tuition increases, which are pooled across the university and allocated to important, critical needs university-wide

Additional student engagement and consultation

- SOE Differential Tuition Proposal is online at: <http://provost.unm.edu/documents/budget-planning/soe-differential-tuition-request-form-revised-2-4-2015.pdf>
- After the information meetings, (February 18th and 19th, from Noon to 1 pm in the Centennial Engineering Center Auditorium) students will be sent a link to an online survey that will provide opportunity for further feedback.

**The University of New Mexico
2015-16 Tuition Projections**

College: School of Engineering
Program: All Engineering and Computer Science

0%

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(1) Tuition is based on full time status, (15 credit hours for undergraduate tuition per semester) Fall and Spring semesters

(2) Engineering tuition is based on full time status, (15 hours per semester) Fall and Spring semesters

*includes student fees

**rates vary depending on field of study, College of A&S listed as base