

Physics & Astronomy Articulation Committee Meeting Minutes
Friday, 2 May 2008

College of New Caledonia (Prince George) - Room 2-244

Present:

Stan Greenspoon (Chair)	Capilano College
Helena Higgs	North Island College
Ed Nelson	Camosun College
Richard Hewko	College of the Rockies
Arnold Sikkema	Trinity Western University
Greg Arkos	Malaspina University College
Normand Fortier	Thompson Rivers University
Matt Reid	University of Northern British Columbia
Tom McMath	Kwantlen University College
Eric Turner	Northwest Community College
Jim Scott	Douglas College
Mike Freeman	Capilano College
Peter Cross	University of Victoria
Dan Murray	University of British Columbia (Okanagan)
Robin Maqueen	Langara College
Bradley Hughes	Langara College
James Brewer	British Columbia Institute of Technology
Dan Phelps	BCAPT
Mike Hayden	Simon Fraser University
Per Joensen	Selkirk College
Janusz Chrzanowski	Coquitlam College
Tim Cooper	University College of the Fraser Valley
Mahmoud Ziaei	Northern Lights College
Richard Christie	Okanagan College
Michael Hasinoff	University of British Columbia (Vancouver)
Andy Sellwood	Vancouver Community College
David Rourke	College of New Caledonia
Barbara Rudecki	College of New Caledonia
Regrets: Vladan Jovicic	Columbia College

Stan Greenspoon, chair of the Physics and Astronomy Articulation Committee called the meeting to order at 9:30 am.

Don Precosky, Dean of Arts and Science at the College of New Caledonia, welcomed the members of the committee.

Logistical matters for the meeting were dealt with.

Thanks were given to book publisher, Pearson, who contributed coffee and snacks for the meeting.

1. Introductions

The attendees introduced themselves to their colleagues.

2. Approval of the Agenda

The agenda was approved unanimously.

The meeting minutes will be posted on the BCCAT website.

(available at <http://www.bccat.ca/articulation/index.cfm>)

3. Approval of 2007 minutes

The web-published minutes of the 2007 meeting were approved unanimously.

4. Matters arising from minutes

- i) Corrections/changes to Textbook Lists/Articulation Charts, which are online at the Articulation Committee website at <http://www.bccat.ca/articulation/index.cfm>, should be sent to the Chair, Stan Greenspoon at sgreensp@capilanou.ca
- ii) Password-protected website with links to Fall 2006 final exams is at <http://physlab.capcollege.ba.ca/logon>. Passwords have been sent to departmental representatives.

5. Date and place of 2009 meeting

Friday May 1, 2009

Place: Thompson Rivers University

For the next two years the meetings will be held as listed below:

2010	Langara College
2011	UBC (Okanagan)

6. Round table reports/brief discussions of significant curriculum changes and associated issues – represented below based on verbal and/or e-mailed reports

UBC (Okanagan)

For PHYS 112 (Algebra-based), the planned number of seats to be released in 08/09 is 234 (vs 198 in 07/08).

For PHYS 111 (Calculus-based), the planned number of seats to be released on 08/09 is 162 (versus 180 in 07/08).

Hence a net increase of 18 in planned first-year Physics intake.

For Astronomy, the planned intake is 120 (same as for 07/08).

Upper-level courses: Enrolments have ranged roughly from 5 to 15.

Curriculum developments over past year: Special Topics in Astrophysics.

Graduates: We have 2 Physics majors, 1 minor, and 1 concentration graduating this spring.

Graduate students: Two are expected to start in the interdisciplinary graduate studies program during the coming year.

UBC (Vancouver)

1. As I indicated in my e_mail message in mid-April we have increased the credit value of Physics 200 -- Relativity and Quanta and Physics 203 -- Thermal Physics from 3 to 4 credits. We will include more material in both courses and there will now be 4 lecture hours per week. The relativity section of P200 will be enlarged. Some basic Statistical Mechanics will be included in Phys 203. This latter course will be taken by Honours students in their 2nd year and Physics Majors in their 3rd year. The minimum number of credits for an Honours degree will decrease from 133 to 132 since we will adjust the elective credits.

2. Physics 206 -- will move to 3rd year in Jan 2010. It will not be offered in Jan 2009 and it will likely become 4 credits with the addition of new material. The details of the change will be presented to the curriculum committee in the fall of 2008. The intent is to include some modern non-linear dynamics.

3. Physics 313 --might become more of a service course for other

departments -- nothing has yet been decided. We are asking our Physics majors to take the enlarged Phys 203 -- in their 3rd year as mentioned above.

The details of our revised programme are available at the following website --

> <http://www.physics.ubc.ca/undergrad/programs.php>

4. Physics 100 has been substantially revised to emphasize the role of Physics in everyday life -- the following is posted on the P100 website course description --

"The course will be taught in the context of energy production and consumption and its influence on environment (pollution, greenhouse effect). Students completing the course should be able to use simple physics concepts to estimate the impact of the various aspects of energy production and consumption on the environment and become aware of the relevance of physics in describing and interpreting the surrounding world."

5. Our 1st year enrollment is basically unchanged -- Phys 101 is up 4% and Phys 102 is down 3%. Our 2nd year physics honours courses are down about 20% but the statistical errors are quite large . A101 is unchanged but A102 is down about 25%.

BCIT

Summary

1. Will continue to run two calculus based physics courses: Physics 1110 Fundamentals of Physics 1: Mechanics and Heat and Physics 2100 Fundamentals of Physics 2: Optics, Electricity and Magnetism
2. Text Book for both: *Physics for Scientists and Engineers* by Giancolli 3rd Ed.
 - a. Will use the fourth edition next September.
3. Format for both courses: 3h lecture and 3h lab. Students do ten labs per term. The lab must be completed and handed in within the lab period.
4. Smaller physics group this year. Eight students successfully completed Phys 1110. Seven students started Phys 2100, four successfully completed.
5. Second year physics courses are not on offer for next September. It is unlikely they will ever be offered.

Camosun College

University Transfer

Enrolment in first-year university transfer courses (both algebra and calculus based) fell by approximately 6% in Fall and Winter semesters. Enrolment in our 2nd year Physics courses was not larger than 5 students in each of 4 courses. SCI 100 (survey of topics in integrated science, Physics + Chemistry + Biology) cancelled due to low enrolment. This may have been due to almost non-existent advertising. The College will offer this course on a trial basis in Winter 2009. Enrolment in our 1st year Astronomy courses continues to be strong.

The Dean of Arts and Science offered to continue 2nd year courses with low enrolment if faculty would agree to teach other courses during the Professional Development period (May & June), or to defer PD allotment, or to split PD allotments over several semesters. The faculty in our department declined this offer, but through negotiation agreed to overload sections of more popular courses, and to mount extra lab sections (taught without compensation) to accommodate as many students as possible. Unfortunately, enrolment was lower than expected this year, so the Dean may decide to close our 2nd year courses this fall anyways. In response to provincial cutbacks, the college board has approved a \$2.5M budget deficit, which will be partly offset by a contingency fund. As part of the elimination of this budget shortfall, many faculty predict that low enrolled 2nd year courses will be closed.

Engineering Programs

Enrolment in Physics courses that are part of Engineering Technology or Engineering Bridge programs continue to be strong (all classes full, low attrition rate).

Pacific Sport Institute

Strong enrolment continues in the “Exercise and Wellness” program at the Pacific Sport Institute. We will continue to offer one course, PHYS 160 Biomechanics (30 students).

High School Partnership

After negotiation between Faculty Association and the College administration, it was decided to offer a special lab course for students at one local high school. Physics XII AP students from Claremont High School (Victoria) attend a weekly 2-hour lab at Camosun College from February to May. The High School Physics teacher attends the lab period as well as the college instructor, who marks the lab reports. There is interest in this course now from other local High Schools, so the course may be expanded in Winter 2009. The High School students pay one-half the regular course fee to attend the lab.

Capilano College

Enrolment: our numbers have stayed about the same since 2006-2007, still not enough to reopen second year courses.

Our courses used to consist of two 2-hour blocks per week, most of which had an additional 2-hour lab. Starting in September, we are moving to two 1.5-hour blocks plus

the 2-hour lab. This is being done throughout most of the college, not just in physics, in order to facilitate scheduling. It will be a challenge to make this change without losing too much from the course content.

We have been using “Mastering Physics” together with Wolfson’s textbook and “Mastering Astronomy” with The Cosmic Perspective. This web-based software is available with several other textbooks as well. Using a mixture of these on-line assignments alternating with hand-in assignments (spot marked) seems most popular with students.

Columbia College (not attending)

As for UT courses, Columbia offers two of them on regular basis: Physics 110 and Physics 120 (calculus based General Physics, part I and part II). This summer, because of the increased interest among our students, we're going to offer Physics 118 - Engineering Mechanics, as well. There is an interest in another Columbia's UT Physics course, Physics 130 - Optics and Thermodynamics, but the enrolment is not high enough to run this course (at least, not yet).

As for high school Physics courses, Physics 12 is offered twice a year with a pretty good enrolment, and Physics 11 once a year and the enrolment is satisfying.

Coquitlam College

Nothing new to report.

Douglas College

- 1) Enrolment was down, especially at the David Lam Campus.
- 2) We have been cut a half time faculty position, a reduction of 20%.
- 3) Introductory Astronomy is doing well.

University College of the Fraser Valley

UCFV is becoming UFV, with no other changes being made as far as we know.

Physics at UCFV is still moving well. We are losing George McGuire and Rob Woodside to retirement, and have been given permission to replace only one of them so far.

Our enrollments are stable in first and second years. Upper level classes are doing well.

This year we are graduating 5 students with a Majors and 4 with Honours. We have 6 are accepted into graduate school this time, 1 NSERC PGSM, another NSERC USRA and others have received financial support.

Our program has undergone no changes since last year, except the addition of two upper level courses (Nuclear and Particle Physics).

Calculus based first year: Young and Freedman

Algebra based first year: Walker

Astronomy: Fix

Engineering Mechanics: Hibbeler

Second year mechanics: Fowles

Second year e/m Griffiths:

Second year thermodynamics: Carter

Second year modern: Taylor

Kwantlen University College

Our enrollments continue to see a slow decline, and it is clearly a trend, not a glitch. We have not lost any courses, but will lose a few sections here and there next year plus a few lab sections, which has a cost in student scheduling flexibility. We could lose one person from our department of 6 faculty.

Our text change from Knight to Giancoli for our first year calculus based courses has been positive. The physics is much less thorough, but the students find it much more readable. Our use of the online homework system Mastering Physics also looks positive after one year. Students were quite frustrated with it for the first few weeks but most came to at least a sullen acceptance. We allotted about 10% of the final grade to the MP assignments, and this increased the overall grade by a small amount for about 2/3 of the students. We may look at a bit of tutorial time on how to use the system as a way around the early struggles with the system. Overall, and with small samples, the class grades seem to be a bit up; the top and bottom ends are hardly touched but the mid-range of the grade distribution seems smoother and shifted slightly higher.

Our second year courses continue to limp along in guided study mode. We have had some good students take the courses this way.

Enrolment numbers for our intended science-stream Astronomy course did not materialize, so it was dropped. Similarly low enrollment prevented a repetition of our Biophysics course.

Anecdotally we seem to be getting more ESL students who are very weak in language skills. This compounds the problems with students who are weak in English as a first language.

Langara College

We offered the same number of course sections during the past year as in previous years, but demand for the courses was weaker, continuing a trend reported on last year.

Enrolment in 2007-08 was down about 10% from 2006-07. This summer term (May—Aug) we are running 6 course sections, all with healthy enrolments.

We ran no 2nd-year courses in 2007-08, for the second year in a row. Preliminary survey results point to low enrolments for 2nd-year courses in 2008-09. We will likely be making a decision in May as to whether to run 2nd-year courses in 2008-09.

We ran six new courses in 2007-08, as follows:

Phys 1101 Physics I for Life Sciences

Phys 1126 Science in History (a lab science)

ASTR 1101 & 1102 (astronomy with lab for science students)

ASTR 3310 & 3311 (astronomy with lab for second-year arts students)

The ASTR courses ran pairwise as half-sections: Fall ASTR 1101 & 3310; Spring ASTR 1102 & 3311. The pairs of courses had 3 lecture hours in common. The fourth hour was distinct, as was the lab for each course.

We are (still) intending to develop a new elective course, provisionally entitled “Energy in Everyday Life” at approximately grade 12 level.

Malaspina University College

1. Student numbers in our 1st year Physics for the life sciences (P111/P112) courses were significantly down (this year: 65/45; last year: 100/60); calculus based physics courses (P121/P122) were up (this year: 50/40; last year 45/30)
2. Second year Electrical Eng transfer program continued to see low numbers this year. Lots of continued outreach & advertising (Eng Fair) to get the word out.
3. Second year physics in trouble. Low numbers & cost cutting at institution.

4. Astronomy ran 3 courses this year: 1st year (solar system, stars & galaxies) & 3rd year (cosmology). Numbers were a little down from last year. Another 3rd year course (history) to be added in the fall of 2008.

UNBC

2007-2008 has been a challenging year for the UNBC Physics Program. In early 2007 the UNBC Administration decided to meet a budget challenge by targeting a select number of “small” degree programs at the University, with Physics being one of the targets. The Provost made a public announcement that admissions would be closed to the Physics degree programs (among others), and applied pressure to have a number of faculty in targeted areas accept voluntary buy-out packages. The admissions closures sparked a showdown between the Provost and the UNBC Senate, and the Provost reversed the closure following a few acrimonious weeks. It later transpired that one Physics faculty member accepted a buy-out so that we have been reduced in faculty complement by one.

In a sense, things have become more normal in the past months– we are still offering the same degrees as before, and although there are fresh budget concerns this spring, the UNBC Administration has made statements that additional job cuts are not being sought.

The Physics Program has had to modify the Physics degree requirements by adding flexibility for degree requirements in upper level (300 and 400 level) courses. We are offering a number of upper level courses only in alternate years so that we can provide a full featured major degree plus a number of “joint” degrees (with Math, Chemistry and Computer Science). The adjustments are small and the major degree program is comparable to that of most other Universities, since the prior degree requirements were actually close to those of an Honours degree program. Additional changes have also been made to accommodate changes in the Mathematics Program offerings, as they also lost a Faculty position through buyouts.

We have also seen in 2007-2008 a sharp drop in students taking 100-level “service” Physics courses. The reasons behind these drops are not clear at the moment, but it does appear that the numbers of Computer Science students have dropped substantially, as have students in Forestry related degrees. It also seems likely that a number of science oriented students were scared away from UNBC due to the well publicized turmoil in early 2007.

It will likely take some time to recover student numbers, and the Program is working on creating new publicity and recruitment events in local high schools.

College of New Caledonia

The College of New Caledonia saw a slight decline in the number of Physics students this past year. International students buoyed the numbers significantly. In PHYS 101, perhaps one half of students are international.

This past year PHYS 101, the calculus based stream, started with 25 – 30 students. Seven students continued on to take PHYS 102. Compared with five years ago, PHYS 101 started with 37 and PHYS 102 started with about 25.

As a result of the College's budget deficit, the Physics department has been reduced to one position. This was done even before the recent 2.6% claw-back. CNC still offers both algebra and calculus based first year Physics streams, but now just one section of each.

PHYS 204 (Engineering Mechanics) was both cancelled and reinstated in the last month. It has typically low enrolment, however, it is a required component of the Engineering Transfer Program. There were seven students enrolled last year, which is a promising increase over the numbers in the previous three years. This may be due in part to recent promotional material sent out to local high schools, as well as the creation of a one-year Applied Science certificate program.

Northern Lights College

- No major changes.
- Only Calculus based physics is offered.
- Slight decrease in enrolments.
- Textbook: seventh edition of Halliday & Resnick John-Wiley (2005).

North Island College

Enrollment in 2007/2008 was lower in all Physics classes. Students who were failing classes were not withdrawing, but staying until the end of the semester. The same trend was observed in Biology and Chemistry courses.

Northwest Community College

- Physics 103 in process of being articulated
Algebra based one semester course with applications to Earth Sciences
Focuses on Macroscopic Materials, Forces and Energy Transfer
- Using in house notes and reference books for Physics 121/122 (calculus based)
- Enrolments are static

Okanagan College

Our numbers overall are down a bit (-10%) in Science at Okanagan College compared to last year. The numbers in Physics and Astronomy stayed roughly the same (-1%). Our numbers in Penticton and Salmon Arm went down but the numbers at Vernon and Kelowna went up to compensate. The numbers in Astronomy were down at both Kelowna and Vernon. Attrition in first year physics was not a major problem this year as it was last year. Most of the attrition still occurs in the first semester.

This year saw our second year for offering second-year courses at Okanagan College. We offered the Modern Physics (OC PHYS 200), second-year Classical Mechanics (OC PHYS 228), plus our two second-year labs (OC PHYS 219/229). All courses had low enrolments (2 to 4 students each) and I do not know how long we will be able to hang onto the second year courses with those enrolments. We will offer the same courses next year with one addition, Statics and Dynamics (OC PHYS 202) for Engineering transfer students. I expect to see a shift away from the regular second year Physics courses to second year interdisciplinary service courses to other sciences in order to keep some second year presence in Physics (e.g., We have four interdisciplinary second-year courses. They are Environmental and Energy Physics, Biophysics, Geophysics, and History of Cosmology.).

We hope to begin offering astronomy in Penticton next year.

College of the Rockies

No changes in offerings. We are however continuing research into instruction in three areas:

- a) Integrated courses especially our combined math and physics, we now hope to enlarge to include chemistry.
- b) Math anxiety and math delivery to arts and education students
- c) Physics modeling - we hope to change our first year Physics 103 (mechanics) into a modeling program this year

Selkirk College

Selkirk College continues to run its usual complement of physics courses, including algebra-based and calculus-based first year courses, second-year engineering statics and dynamics (PHYS 200 and 201), second-year electricity and magnetism, second-year modern physics (relativity & quanta), as well as an introductory astronomy course (with a laboratory component) for non-science majors. We have no eliminated or new courses in physics or astronomy.

Simon Fraser University

1. Will switch to a custom calculus-based version of Giancoli in PHYS 101/102 ('Physics for the Life Sciences' stream) next fall; plan is to incorporate several additional chapters with emphasis on biological physics that will be written by SFU faculty (Fall 2009). These courses have traditionally been taught with an algebra-based textbook, but do have calculus and biology co-requisites.
2. Ran a pilot 'early intervention' program during the Fall 2007 term. Goal is to reduce failure rates in first-year courses by providing remedial help. Feedback from students is positive, and there is some indication that retention rates may have improved. Plan to run this program again during both fall and spring semesters next year.
3. Budget cuts will result in the elimination of PHYS 190 (Astronomy for non-science majors) and most of our Teaching Apprenticeship positions next year. The plan is to reinstate both in the following year. Will still offer PHYS 192 (Musical Acoustics) as a breadth course for non-science students.
4. Textbooks

PHYS 100 Introduction to Physics	Knight – <i>College Physics (Custom Ed.)</i>
PHYS 101/102 Physics for Life Sciences	Giancoli – <i>Scientists and Engineers (Custom Ed.)</i>
PHYS 120/121 Standard Physics	Knight – <i>For Scientists and Engineers</i>
PHYS 125/126 Advanced Stream	Halliday, Resnick & Krane – <i>Physics</i> , Taylor, Wheeler – <i>Spacetime Physics</i> , and Moore – <i>Six Ideas that Shaped Physics</i>
PHYS 140/141 Studio Physics	Cummings et al. – <i>Understanding Physics</i>
PHYS 190 Intro to Astronomy	Chaisson/McMillan – <i>A Beginner's Guide</i>
PHYS 192 Logarithm and Blues	Hall – <i>Musical Acoustics</i>
PHYS 211 Mechanics	Taylor – <i>Classical Mechanics</i>
PHYS 221 E&M for Engineers (terminal)	Ulaby – <i>Electromagnetics for Engineers</i>
PHYS 231 & 233 Laboratories	Taylor – <i>Error Analysis</i>
PHYS 255 Vibrations and Waves	French – <i>Vibration and Waves</i>
PHYS 321/421 E&M	Griffiths – <i>Introduction to Electrodynamics</i>
PHYS 285 Special Relativity and QM	Tipler and Llewellyn – <i>Modern Physics</i>

Thompson Rivers University

1. Student Numbers for 2008-2009.

Registrations are flat or declining, which has resulted in a loss of base funding. International students are keeping us up. Listed below are the numbers of seats that will be available in first-years Physics this Fall:

PHYS 110 (Algebra-based Physics):	130 seats
PHYS 115 (Calculus-based Physics):	100 seats
PHYS 113 (Algebra- based for Arts students):	40 seats
PHYS 158 (Physics for Respiratory Tech.):	80 seats

PHYS 151 (Physics for Engineering Tech.):

40 seats

These numbers of seats have been stable for a number of years now. The only change for this year is an increase of 20 seats in Respiratory Therapy. Despite the fact that enrolments in science at TRU have been either flat or declining, Physics has not been seriously affected yet. The decline in enrolment has gradually eliminated the wait lists that we used to have in most of our first-year courses. Now that we no longer have wait lists, the number of students in first-year physics courses may start to decline.

2. New Courses

- We are currently developing a new upper-level lab course for third and fourth year physics major students. We are hoping to have the course in place for the academic year 2009-2010.
- We are planning to eliminate PHYS 113 (Algebra-based Physics for Arts student) and replace it with a new one. We are in the early stage of design and planning but the new course could include topics such as global warming, generation, use, and conservation of energy, etc. The objective would be to increase the science literacy of arts students. The course would be taught in a conceptual manner using little or no mathematics.
- We are also considering the development of a second-year course in geophysics as many of our students have expressed interest for more courses in geophysics and geology.

Trinity Western University

- There have been no changes in curricular offerings.
- We had good enrollment in our alternate-year Mechanics course (Physics 210); nine students, up from three in Spring 2005. This course has vector calculus (Math 223) and Physics I (111) as prerequisites, uses Fowles & Cassiday's *Analytical Mechanics* and does not have a lab, and includes the use of Maple 11 and a historical paper in classical mechanics.
- Our conceptual modern physics course doubled in enrolment for the third time, to 30 students.
- First-year calculus-based physics sequence (Physics 111-112)
 - Enrolment in our first-year calculus-based physics sequence dropped significantly to 23 & 15 in 2007-08 to [from 58 & 42 (2005-06) to 51 & 37 (2006-07)]. Reasons for this are not fully clear, since the chemistry and biology programmes, which require physics, have not lost students. However, some contributing factors were:
 - An unforeseen three-way scheduling conflict with organic chemistry and calculus force second-year biology students to delay physics.
 - Math skills of incoming students continue to fall, and we were more proactive in removing at-risk students based on poor math

placement scores. (About a third of the class dropped within the first two weeks.)

- The failure rate dropped to 3% in 2007-08 from 11-15% in 2005-07. This is due partly to a better learning environment in the smaller class but mainly to aggressive removal of unfit students.
- Our “Department of Mathematical Sciences” (which includes Computing Science, Mathematics, and Physics) is undertaking program reviews this year. The main recommendations of physics are:
 - create a hybrid intermediate lab for students taking either mechanics or electromagnetism (only the latter currently has a lab) and a hybrid senior lab for students taking either modern physics or optics (only the latter currently has a lab).
 - create an astronomy course to serve the general student
 - coordinate the modern physics course better with a similar course offered by chemistry
 - work toward a joint major in physics & math
- We have started a club for students in the Mathematical Sciences Department, which held its inaugural meeting on 1 April 2008 featuring pizza and a talk by a thesis student in computing science. The main goal of this club is to foster a better sense of community among students, among faculty, and between students and faculty, and will feature general research talks by faculty and thesis or summer students.

Vancouver Community College

VCC runs a section of the first-half of first year physics (Phys 1100) in the fall and then another section of Phys 1100 in the winter as well as a second half, Phys 1200 (all are calculus-based). We do not have second year physics courses.

- 25 students enrolled in Physics 1100 September 2007, 20 finished the course.
- 19 students enrolled in Physics 1200 in January 2008 with 18 finishing the course.
- 15 students enrolled in Physics 1100 in January 2008, 11 finished the course.
- We still run the one hour group-problem solving session every Friday. It continues to be popular with the students.
- We tried using ‘Mastering Physics’ for the first time with the September 2007 Physics 1100 students. It proved to be very unpopular and not as effective as hoped.

University of Victoria

Overall enrolment numbers stable (for past 5 years have seen about 315 EETS +/- 5%)
- Graduate enrolment up at about 60 students.

- Will offer Phys 102 (General Physics) again this summer. This is nominally a two-term course, but will be offered as an intense course (6 hrs lectures + 3 hrs lab), in the daytime this summer as opposed to the evening last summer.
- Revamped Astr program (as reported last year) will start to be rolled out in the coming fall and spring terms.
 - Astr 250 in the fall - first required course at 2nd yr level. (Old Astr 200B)
 - Astr 150 in spring - first year level (Old Astr 200A), recommended but not required for an astronomy program.
 - Will have new astronomy space in new Science building, including a new dome and astro labs - (yet to get the new telescope).
- No major changes in text books for 1st year
 - 102 General Physics: Serway, Faughn, Vuille (now 8th ed)
 - 112, 120, 122, 125 Serway, Jewett (7th)
- Have been offering a tutorial (formalized study sessions) for 3rd year students, manned by selected grad students. Found to be useful and adds to "community building".

7. Proposals for additional afternoon discussion topics

- i) Volunteering
- ii) Video-conference meeting

Afternoon Discussion Items

8. Scheduled class hours per week (Mike Freeman)

Survey

3-hours versus 4-hours per week lecture scheduling

- | | |
|---|---|
| • lectures - 3 hours, tutorial - none | 9 |
| • lectures - 3 hours, tutorial - 1 hour | 5 |
| • lectures - 4 hours, tutorial - none | 7 |
| • lectures - 4 hours, tutorial - 1 hour | 4 |

What is the attrition rate (survival) rate versus above system of scheduling?

Not enough data are available to answer.

Many students do not withdraw from the courses and wait until the end of the semester even when they are doing very poorly.

9. Enrolment trends across British Columbia

There is a general decrease in student enrollment throughout the province. Most of the post secondary institutions observe the same trend that the number of students is declining steadily.

TRU and Malaspina University College - general decrease in all areas

Okanagan College - static enrollment, yet slightly lower in a first year

Capilano College - peak of the enrollment in 2003, very low numbers for the next year

10. Grade 12 Provincial Exams

How many institutions require Physics 12 provincial exam as a prerequisite?

There is uncertainty about the current policies.

Some teachers teach to the exams, instead of following the curriculum.

Some teachers will not enrich their courses if this material is not going to be on the exam.

The exams seem to be getting easier (or more difficult).

Provincial exams were initially set to evaluate the teachers and schools, not students.

Students separate problems from the theory. They do not see connections, but just do the number-crunching.

11. Discussion of topics chosen by the committee (agenda item 7)

i) Volunteering

Is teaching for free or for a reduced compensation allowed in post-secondary institutions?

Feasible in cases of budget deficiency.

Langara College is offering smaller courses for free or for a reduced compensation.

At Malaspina University College staff members are assigned more work when classes are small.

At the College of the Rockies there are strict rules imposed by the union. Faculty members can teach courses for no compensation.

ii) Video - conference Articulation meetings

Could the traditional Articulation Meeting be converted into a video - conference meeting as a way to to save money?

Capilano College - feasible but not practical

UBC, NIC - direct interaction between people during the traditional meetings, more valuable discussions during the social functions

College of the Rockies - the only opportunity to talk to other professionals (especially important for smaller colleges)

UBC - opportunity to visit the new facilities

It was proposed and accepted by everybody that the contact information (e-mail/phone) should be distributed to all participants.

Adjournment at 3:14 pm

There was a tour of the Prince George Astronomical Observatory in the evening following the adjournment.