

# MATHEMATICS PLACEMENT

revised by Jakub Jasinski, October 14, 2008

1. Mathematics Placement: The Mathematics Department administers placement test and makes recommendations concerning which mathematics courses students should enter and whether or not they should seek Center for Learning and Teaching Excellence (CTLE) help at once. Currently (2008) Drs. Jakub Jasinski (x6102) and Chris Plotka (x6208) coordinate the process.

2. The Tests: There is one math placement test which consists of three parts: DAT (25 questions), PT (28 questions), and APT (7 questions). DAT, the Diagnostic Algebra Test tells us if a student is ready for pre-calculus (MATH 103 or 106) or does he/she need an algebra refresher (MATH 005). PT, the Placement Test, informs us if a student belongs in pre-calculus (MATH 103, or MATH 106) or Calculus I (MATH 114, or MATH 107 first semester calculus). APT, the Advanced Placement Test, flags certain students who may be able to skip Calculus I and go directly into Analysis II (MATH 221 or MATH 108), although further testing (arranged individually with the department) is needed before such a move can be made. DAT, the Diagnostic Algebra Test, informs us about students' skills in basic algebra (e.g. quadratic equations). The entire test is multiple choice. Students are usually given an hour to complete the three tests. Calculators are not allowed.

3. All students entering the University without a transfer Math course from another college are requested to take the test. The database maintains test scores DAT out of 25 and PT out of 28 and APT out of 7.

4. Freshmen: All entering freshmen---including those with AP mathematics credit and Scranton Prep. School MATH 103, 114 or 221 credits ---should be tested. Normally this is done during the morning of the first day of each Summer Orientation session. Students who miss Summer Orientation should be tested in one of the three advising centers, especially students not entering in the Fall. In that case, students' answer sheets from both tests must be sent to the Mathematics Department.

5. Transfer Students: Transfer students should also be tested. Exceptions are students who have transcribed mathematics credits which clearly indicate the first mathematics course they need at the University. This is usually done during the August or January Transfer Student Orientation.

6. Reports: At each Summer Orientation session advising centers receive placement results of their students attending the session. Individual reports for students' advising files are included. Reports indicate three scores with recommendations on topics needing review. Also, copies of students' individual reports are mailed to their homes.

At the beginning of the fall semester all mathematics instructors receive alphabetized lists of all their students who were tested during the summer. If students are tested late, then their scores may be missing from the lists. Every effort is made to place individual reports in advising files. Sometimes these are hand written rather than computer generated.

Questions concerning students' placement can be directed to Drs. Jasinski or Plotka.

7. PT Reports:

PT Test			
Score $n$ out of 28	$n \leq 13$	$14 \leq n \leq 17$ uncertain, see DAT and SATM	$18 \leq n$
Calculus Recommendation	Math 103	If $\text{DAT} \leq 14$ , take Math 103 $18 \leq \text{DAT}$ may take Math 114 $15 \leq \text{DAT} \leq 17$ uncertain, talk to student, see SATM	Math 114
Discrete, Math 142 Recommendation	take <u>after</u> passing Math 103	$\text{DAT} \leq 14$ take Math 103 $18 \leq \text{DAT}$ may take Math 142 without Math 103 $15 \leq \text{DAT} \leq 17$ undecided	Math 142

PT scores are reported as  $n/28$  where  $n$  is the number of correct answers from the 28 questions that are scored. Current, 2008 standard gives placement in MATH 103 (Pre-calculus) if  $n \leq 13$ , in Math 114 (Analysis I) if  $n \geq 18$ , and an uncertain placement if  $14 \leq n \leq 17$ . Placements by course or courses are reported. (Please note that students' majors---as officially given in the University's data base---influence placements. Thus, changes of majors may require changes in placements.) Individual reports also include statements important in deciding what to do with students whose placement is in the uncertain range ( $14 \leq n \leq 17$ ).

Placement for low scoring students will include the message "w/CTLE" which indicates that they should seek immediate help from the CTLE. Low scoring students whose major does not require MATH 103 or 114 should be placed based on the DAT score. High scoring students who do well on the APT (seven optional calculus questions) get the message "Test for Math 221 (Calculus II)" which asks them to consult with Drs. Jasinski or Plotka of the Mathematics Department in order to see if skipping to MATH 221 would be appropriate. Several additional self-explanatory messages may appear on the reports.

## 8. DAT Reports

DAT Test					
Score $m$ out of 25		$m \leq 9$	$10 \leq m \leq 14$	$15 \leq m \leq 18$	$19 \leq m$
Recommendations	KSOM	Math 005	If PT<14 then Math 106	If PT<12 then Math 106. If $12 \leq \text{PT} \leq 14$ then undecided if $\text{PT} \geq 15$ then Math 107	If $14 \leq \text{PT}$ then Math 107. If $12 \leq \text{PT} \leq 13$ then undecided. If PT<12 then Math 106.
	CAS non science and non math	Math 005 or Math 102, or 105 w/CTLE	Math 101, 102, 105, 106 <sup>1</sup> or 204 w/CTLE	Math 101, 102, or 105 or 106 <sup>1</sup> or 204. If CASC and $\text{PT} \geq 10$ Math 103	Math 102, 105, or 204, see PT score if $14 \leq \text{PT}$ , 107 if $18 \leq \text{PT}$ , 114 or 142
	CAS HardSci, Math, CompSci	discuss change of major	see PT score	see PT score	see PT score
	CGCE	Math 005	as CAS above	as CAS above	as CAS above
	PCPS, Elementary and Spec. Ed.	Math 102 or 105 w/CTLE	Math 102 or 105	Math 102 or 105	Math 102, 105 see PT score if $14 \leq \text{PT}$ , 107 if $18 \leq \text{PT}$ , 114 or 142
	CPS Nursing	Math 005	Math 106	PSYC 210	PSYC 210
	CPS, Phys. Therapy	see PT			
	CPS Sec. Education, non Math or Sci.	Math 102 or 105 w/CTLE	Math 102 or 105	Math 102 or 105	Math 102, 105 see PT score if $14 \leq \text{PT}$ , 107 if $15 \leq \text{PT}$ , 114 or 142
	CPS Sec. Education, Math or Sci.	discuss change of major	see PT score	see PT score	see PT score

<sup>1</sup>Math 106 is recommended for undecided students who have interest in business and economics. Students who do not plan to take Math 107 should not enroll in Math 106.

DAT scores are reported as  $m/25$  where  $m$  is the number of correct answers from the 25 questions on the DAT part of the test. Placements by course or courses are reported. DAT course placements depend on major even more heavily than PT placements do. Individual reports include a verbal description of questions missed.

Students may receive the “w/CTLE” message for DAT placements just as for PT placements. Students scoring 19 or higher on the DAT part, regardless of major, should base their placement on the PT test.

9. Interpretation and Use: Placements are advisory not mandatory (otherwise there would be an incentive to cheat on the tests.) However, students insisting on taking courses above their placement level may expect little sympathy and no refunds if they find they do poorly. Advisors should be alert to the possibility that low placement scores can result from students having been out of school and away from mathematics for several years prior to taking the placement test. Another problem is heavy use of graphing calculators in high school math courses.

Actually, our major problem concerns students enrolling in courses below their placement level. This should be discouraged except in cases of obvious mathematics anxiety. Students preparing to underachieve in this way should be reminded that the boredom of an easy class can lead to bad study habits and even to poor grades. In any event, much time and money can be wasted.