

# Re: math programs

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*Source:* <http://sci.tech-archive.net/Archive/sci.math/2006-09/msg01301.html>

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- *From:* "The poster formerly known as Colleyville Alan" <nospam@xxxxxxxxxx>
  - *Date:* Thu, 07 Sep 2006 03:47:35 GMT
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<studylogic06@xxxxxxxxxx> wrote in message  
<news:1157562920.971950.98500@xx>

Hmm, yes. As I delve more into the course descriptions and prerequisites for the analysis classes, it does seem that they are heavily associated with calculus.

This page has an overview of the subject, <http://www.math-atlas.org/>  
Click on the "Take a tour" link to get an introduction and "start the tour" when you get to the next page.

Yes, calculus is subsumed under the category of analysis, so it may not be mentioned separately.

So I guess it is safe to say that 'calculus' does not merit its own mention as a major area in the programs because it is considered part of the early development of the 'analysis' area (I see there is an opinion against this in the thread,

Herman is rather outspoken about the idea that one should learn concepts and only then proceed to computation. Since I just finished Calculus I a few weeks ago, I happen to agree with him that too much emphasis is placed on doing calculations without understanding the concepts. That was less of a problem in differential calculus, but seems to be more pronounced in the study of integration. The last part of Calc I touched on integration and now my Calculus II class is reviewing that little bit and moving on from there. Unfortunately, it seems to me like it is all technique at this point.

Herman has decades of teaching experience and has seen the results of this kind of teaching. Other professors here disagree with him as to the order in which topics should be presented. I think it is somewhat moot since the universities specify the order in which the classes are taught.

but by "early development" I mean

## Re: math programs

the usual order that the material is presented in for teaching purposes in most schools)...

similar in the way that 'arithmetic' wouldn't be listed since it is well covered under the algebra area (not saying that we don't utilize arithmetic in the other areas, just that it is mostly taught within a sequence that leads to higher algebras)

so in general, at least in the typical way that material is taught, the main areas and what they include could be...

**ALGEBRA** – includes arithmetic, basic number theory, pre-algebra, college algebra, linear algebra, and some more...

**ANALYSIS** – includes various levels of basic and advanced calculus, functions, infinity, proofs, and more...

**GEOMETRY/TOPO** – trigonometry, geometry (Euclidean and non-E), topology, spaces...

Though it would be an interesting Philosophy of Mathematics question to discuss how arbitrary or real the above divisions are... but of course, we have to have some way of dividing up the material for pedagogical purposes... or do we? I wonder what interesting material and theorems other societies might come up with if they were spoon-fed the material in different patterns or with no divisions at all.