

**Manual for** `uoftexam.sty`  
by  
Martin J. Osborne  
`martin.osborne@utoronto.ca`  
Version 1.8, October 2017

## 1. Introduction

`uoftexam.sty` is a  $\text{\LaTeX}$  style file for typesetting tests and exams in the style required by the University of Toronto Faculty of Arts and Science. The latest version is available at <http://www.economics.utoronto/osborne/latex>. It supports the format required by Crowdmark.

You specify the name of the course, the type of exam, the questions,<sup>1</sup> and the number of points for each question. The style

- marks the pages appropriately (“page  $k$  of  $n$ ”) (or slightly differently if you select the `crowdmark` option)
- puts the number of pages and number of questions in the exam on the cover page
- reports the total number of points on the exam
- puts the correct statement at the end of the exam
- optionally prints a table on the front page with the list of question numbers, the number of points each question is worth, and space for a grader to enter the number of points a student obtained.

If you include solutions after the questions, these can be printed by including a option when the package is loaded.

Macros to leave space on the exam for the students to write their answers are provided.

## 2. Installation

- Put `uoftexam.sty` in a directory from which  $\text{\TeX}$  reads input files.

For BaKoMa, the directory might be

```
\localtexmf\tex\latex
```

---

<sup>1</sup>Suggestions are welcome on how to modify the style so that it makes up the questions.

or a subdirectory thereof.

For MiKTeX, it might be

```
\miktex\localtexmf\tex\latex
```

or a subdirectory thereof.

If you don't know the directory, search your system for files with extension `sty`; look at the directories in which such files exist and choose the most promising one.

- Let your system know that `uoftexam` has arrived. (In BaKoMa, Options → Common Settings → Directories, then select the directory in which you put the style and click “Rebuild ...”. In MiKTeX, “refresh the filename database”.)
- To use the package in a document, put the line

```
\usepackage{uoftexam}
```

in the preamble.

### 3. Document structure

A document should start by specifying the style:

```
\begin{document}  
\documentclass[12pt]{article}  
\usepackage{uoftexam}
```

The last line may be replaced by

```
\usepackage[<options>]{uoftexam}
```

where `<options>` is a comma-separated list of strings from the set {`draft`, `solutions`, `crowdmark`, `PointsAtRight`, `StudentNumberOnly`}. For example, you can say

```
\usepackage[draft,solutions]{uoftexam}.
```

For the effects of the options, see 5.

Next come the parameters of the course and the exam type:

```
\Course{ECO 299H1 S}{Game Theory}  
\Instructor{Martin J. Osborne}  
\TestName{TERM TEST 1}  
\Date{February 2000}
```

```

\Time{75 minutes}
\Aids{No aids allowed}
\QToBeAnswered{Answer all questions.}
\PointTotal{100}
\SpInstructions{{\bfseries To obtain credit, you must give
arguments to support your answers.}}
\Test

```

The lines `\Instructor{<text>}` through `\QToBeAnswered{<text>}` put text on the first page in a specific format (which cannot currently be changed without editing the style).

The `\PointTotal` specification is necessary *only* if the total number of points on the exam differs from the sum of the points on all the questions (because, for example, students do not have to answer all questions). If the total number of points on the exam is the sum of the points on all the questions, omit the `\PointTotal` command.

As an alternative to `\Test`, you may use `\WriteOnTest`, `\Final`, `\WriteOnFinal`, or `\WriteOnComp` (for a comprehensive exam). The commands ending in `Final` and `Comp` ignore the `\TestName` parameter, which can be omitted. The commands beginning `\WriteOn` put a header at the top of the page for a student to write her name, student ID, and signature, or, in the case of a comprehensive exam, only her student ID.

The argument of `\SpInstructions` may be empty.

Now, if you wish, you can put a table with the points on each question, by including the line

```
\PointTable
```

(This command takes the points from the numbers you enter in the body of the test, below. If you are using the option `solutions`, the command has no effect.) If the table doesn't fit on the cover page and you need to split it, put an optional argument after `\PointTable` giving the number of columns—for example,

```
\PointTable[2]
```

(If you want to include the total (number of points somewhere else in the test, you can do so by typing `\ref{pointtotal}`.)

If you like, you can next put

```
\nextpage
```

to start a fresh page (probably a good idea for a write-on test).

Now the body of the test starts. It consists of a list of questions, after each of which a number of points is indicated in parentheses. For a write-on test, space for students to write their answers is specified by adding `\pad` where you want the space, and `\nextpage` where you want a new page to start. Thus for a write-on test you might have:

```
\begin{enumerate}
\item \begin{enumerate}
  \item (30) Show that every finite strategic game has
    a mixed strategy Nash equilibrium.
  \pad
  \item (10) Show that not every finite strategic game has
    a pure strategy Nash equilibrium.
  \pad
\end{enumerate}
\item (70) Show that every trembling hand perfect equilibrium
  of an extensive game induces a sequential equilibrium.
\pad
\end{enumerate}
```

(For a test on which the students will not write their answers, the `\pads` are not needed.)

Finally, end the document:

```
\end{document}
```

You may add material after the `\end{enumerate}` (material to which the students may refer during the exam), but this material cannot include any `enumerate` environment.

If a question continues from one page to the next, the command

```
\qcontnextpage
```

instead of `\nextpage` will put a statement at the bottom of the page that the question continues on the next page. Similarly

```
\scontnextpage
```

puts a statement that space for the answer continues on the next page at the bottom of the page.

If students write their answers on the exam paper, you may wish to include some pages for rough work at the end. You may do so by including the command

```
\roughpage{Text to go at top of page}
```

(The text might, for example, be “**Page for rough work (will not be graded)**”). You can also of course produce the same effect manually; using the `\roughpage` command has the advantage that under the `draft` option nothing will print.

You can include a solution after a question by making it an argument of the `\solution` command. For example,

```
\solution{All strategy pairs are Nash equilibria.}
```

Then if the `solutions` option is included in the preamble (see Section

If you wish to include material that will appear only when the `solutions` option is active, but do not wish the word “Solution” to appear, use the macro `\solutionx`.

You need to compile your exam two or three times to resolve the (implicit) cross-references used to put the number of questions on the first page, etc. At the end of a compilation you’ll see on the screen a report of the total number of points on your exam.

#### 4. Using the `itemization` environment

The package redefines `\item`. If you wish to use the `itemization` environment within a question or a solution you need to use `\xitem` (which functions in the way that `\item` normally does) instead of `\item` to start each item.

#### 5. Options

The style has five options. You invoke them by including their names in a comma-separated list in brackets between `\usepackage` and `{uoftexam}` in the preamble. For example, you can specify

```
\usepackage[draft,solutions]{uoftexam}
```

or

```
\usepackage[PointsAtRight]{uoftexam}.
```

or

```
\usepackage[crowdmark]{uoftexam}.
```

`draft` Spaces left in the exam for students to write their answers are ignored, if there are any such spaces. (This option allows you to print

a draft without using a lot of paper. Using it in conjunction with the solutions option also makes sense.)

`solutions` The solutions to the question (as specified as arguments of the `\solution` command) are printed, `\PointTable` is ignored, and no space for a student name or number is put on the first page (regardless of whether the option `StudentNumberOnly` is used).

`crowdmark` The cover page asks for the student's U of T email address as well as her name and student number (because it may be easiest to match students by their email address), page numbering is omitted (because Crowdmark adds page numbers itself), and the points table on the front page (if included) is formatted to provide information on the distribution of points, not for a grader to enter the marks.

`crowdmarkAuto` When used together with the `crowdmark` option, the cover page is formatted appropriately for Crowdmark's automated matching.

`StudentNumberOnly` If the `solutions` option is not specified, then at the top of the first page there space is left for the student to write his/her student number, but *not* her name. In the absence of the `StudentNumberOnly` option, space is left for the student to write his/her name and student number. If the `solutions` option is specified, no space is left for a name or number.

`PointsAtRight` The number of points a question is worth is printed not immediately after the question number, as in the default style, but right-justified at the end of the question. **This option requires the text of each question to be enclosed in braces, as in the following example.**

```
\begin{enumerate}
\item \begin{enumerate}
\item (30) {Show that every finite strategic game has
a mixed strategy Nash equilibrium.}
\pad
\item (10) {Show that not every finite strategic game has
a pure strategy Nash equilibrium.}
\pad
\end{enumerate}
\end{enumerate}
```

```
\item (70) {Show that every trembling hand perfect equilibrium  
of an extensive game induces a sequential equilibrium.}  
\pad  
\end{enumerate}
```

## 6. Incompatibilities

With either the `draft` or `solutions` options, the style is compatible with the `hyperref` package, but without either of those options it is not.

## 7. History

**Version 1.0, 2000.1.29** Developed from a style written in 1996.

**Version 1.1, 2000.3.19** `\PointTable` reimplemented as an alignment, with split between two tables allowed via optional argument giving number of columns.

**Version 1.2, 2005.1.28** Added `PointsAtRight` option (at suggestion of Jonathan Lau).

**Version 1.3, 2005.2.28** Added `solutions` option and `\solution` macro (at suggestion of Alex Maynard), and `\roughpage` macro.

**Version 1.4, 2005.3.19** Added `\xitem` macro to handle itemizations (or other uses of `\item`).

**Version 1.5, 2005.11.20** Added `\PointTotal` macro to allow for manual specification of point total.

**Version 1.6, 2013.3.22** Added option `StudentNumberOnly` to print space only for a student number, not both a name and a number, on the first page. When the `solutions` option is used, `\PointTable` is now a no-op, no mention is made on the first page of the number of pages or questions, no space is left on the first page for either a name or student number, and no notice is put at the end of the test about the number of pages.

**Version 1.61, 2016.2.17** Bug in the effect of the `draft` and `solutions` options on `\PointTable` corrected.

**Version 1.7, 2016.10.22** Added option `crowdmark`, to format test suitably for Crowdmark.

**Version 1.8, 2017.10.15** Added option `crowdmarkAuto`, to format test suitably for Crowdmark's automated matching.