

# **PHYS S0152 / Mathematical Physics II / Spring 2008**

---

- **Course Description**

This is the second term of a two-semester undergraduate course that introduces some of the mathematical techniques frequently used in the analysis of a wide variety of physical problems. *This course is lectured in English.*

- **Lectures**

Tuesday 10:10–11:00, 11:10–12:00; Thursday 11:10–12:00 in S103

- **Office Hours**

Tuesday 15:00–16:00, Wednesday 14:00–16:00; and by appointment

- **Lecturer**

Prof. Shang-Yung Wang (Office: Sa123; Ext: 3160; Email: [sywang@mail.phys.tku.edu.tw](mailto:sywang@mail.phys.tku.edu.tw))

- **Recitation**

Thursday 9:10–10:00 in S103, carried by Teaching Assistant (to be named later)

- **Course Web Page**

Course information and homework assignment are available online at

<http://taos.phys.tku.edu.tw/moodle>

- **Textbook and References**

1. *Mathematical Methods for Physicists*, G.B. Arfken and H.J. Weber, 5th ed. (Textbook, 4th ed. on reserve in the Library)
2. *Mathematical Methods of Physics*, J. Mathews and R.L. Walker, 2nd ed. (Reference, on reserve in the Library)
3. *Mathematical Physics*, E. Butkov (Reference; on reserve in the Library)
4. *Handbook of Mathematical Functions*, M. Abramowitz and I.A. Stegun (Reference, available online at <http://www.convertit.com/Go/EducationPlanet/Reference/AMS55.ASP>)
5. *MathWorld – A Wolfram Web Resource*, E.W. Weisstein (Reference, available online at <http://mathworld.wolfram.com>)

- **Homework**

- *Homework is a very important part of the course.* Homework will be assigned in class every Tuesday, and is due the following Tuesday at the start of the class. Use A4 size paper (same size as this one) for solutions and have them stapled together if multiple sheets are used.
- *Late homework will not be accepted unless special permission is granted in advance – no exceptions.*

- Discussion on homework is allowed as well as encouraged, *however* you have to (i) write up your own solutions by showing your own work, and (ii) write down the names of anybody you discussed with.
- *Plagiarism is not tolerated and will be grounds for automatic rejection of your homework.*

#### Plagiarism

1. a piece of writing that has been copied from someone else and is presented as being your own work
2. the act of plagiarizing; taking someone's words or ideas as if they were your own

Source: WordNet ® 1.6, © 1997 Princeton University

#### • **Class Attendance**

You are expected to attend *all classes* (both lectures and recitation). Lecture attendance will be taken at irregular intervals; recitation attendance is mandatory. *Excessive absences may result in a reduction of the final grade or a failure in the course.*

#### • **Midterm Exam**

To be announced

#### • **Final Exam**

To be announced

#### • **Grading**

Homework (30%), Midterm (30%), and Final (40%)

#### • **Plan of Lectures (tentative)**

1. Integral Transforms
2. Sturm-Liouville Theory
3. Special Functions
4. Boundary-Value Problems (if time permitted)