

天文观测与天体物理课程教学大纲

| 课程基本信息 (Course Information) | | | | | |
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| 课程代码 (Course Code) | PH340 | 学时 (Credit Hours) | 48 | 学分 (Credits) | 3 |
| 课程名称 (Course Name) | (中文) 天文观测与天体物理 | | | | |
| | (英文) Astronomical Observations and Astrophysics | | | | |
| 课程性质 (Course Type) | 物理学专业和物理学专业 (国际班) 选修课 | | | | |
| 授课对象 (Audience) | 物理学专业、物理学专业 (国际班) 大学三年级本科生 | | | | |
| 授课语言 (Language of Instruction) | 中文 | | | | |
| 开课院系 (School) | 物理与天文学院 | | | | |
| 先修课程 (Prerequisite) | 无 | | | | |
| 授课教师 (Teacher) | | 课程网址 (Course Webpage) | | | |
| *课程简介 (Description) | <p>作为一门天文的入门选修课程，这一课程的目的不是培养你们的技能——尤其是推导公式的技能，也许你们在普通物理、高数、理论物理等方面都得到了相关的训练；而是期望能扩展你们的见识；并获得一些天文相关的概念和体会。——比如，知道恒星和行星的区别，知道星系和星团的区别，知道什么是星等？什么是光年、秒差距？知道天文的时间、坐标和观测的关系等，知道如何实现天文的观测、对应可以探索什么样的天体物理信息等等。当然，如果有那么一小部分人对天文学研究产生了兴趣，那也是令人开怀的。</p> | | | | |
| *课程简介 (Description) | <p>As an introductory course of Astronomy, I am not intend to improve your technical skills, especially your ability to derive equations, which you may get enough training in your classical physics, mathematics and theoretical physics courses. The main purpose of this course is to broaden your basic knowledge of Astronomy. We hope that you may get to know about the following astronomical concepts after taking this course. You can understand what is the difference between stars and planets, what is the differences between galaxies and star clusters, what is magnitude, what is light year and par second? You should be able to tell how the astronomical time and coordinates are associated with the observation strategy. You may get a rough idea about how to make appropriate observations and what is the related astrophysical properties one can get from various kinds of observations. The last not the least, if someone really has the interest in carrying out astronomical researches after taking this course, that would be fantastic.</p> | | | | |
| 课程教学大纲 (course syllabus) | | | | | |

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| <p>*学习目标 (Learning Outcomes)</p> | <ol style="list-style-type: none"> 1. 掌握基本的天文与天体物理概念 2. 理解天体物理的大致研究内容 3. 观测天文学的发展和现状 4. 各种观测手段和研究特色 5. 前沿报告，理解当前最前沿研究动向 6. 专题阅读，体会天文学研究方式 | | | | | |
| <p>*教学内容、进度安排及要求 (Class Schedule & Requirements)</p> | <p>教学内容</p> | <p>学时</p> | <p>教学方式</p> | <p>作业及要求</p> | <p>基本要求</p> | <p>考查方式</p> |
| | <p>天文与天体物理概念</p> | <p>6</p> | <p>课堂教学, 板书+ppt</p> | <p>平时作业</p> | | |
| | <p>天文观测历史、现状</p> | <p>9</p> | <p>ppt</p> | <p>平时作业</p> | | |
| | <p>天文观测与天体物理</p> | <p>15</p> | <p>ppt</p> | <p>平时作业</p> | | |
| | <p>专题阅读</p> | <p>4</p> | <p>选题、总结</p> | <p>文献阅读、写总结材料</p> | | |
| | <p>前沿讲座</p> | <p>12</p> | <p>专题讲座</p> | <p>同上</p> | | |
| | <p>随堂考试</p> | <p>2</p> | | | | |
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| <p>*考核方式 (Grading)</p> | <p>平时成绩50%，期末考试50%（开卷考试）。平时成绩包括出勤（20%）、平时作业（20%）以及一次文献讲解（10%）（如果出勤率低于50%，总成绩一概0分）</p> | | | | | |
| <p>*教材或参考资料 (Textbooks & Other Materials)</p> | <p>《天体物理概论》：科大，向守平 2008 以及 http://staff.ustc.edu.cn/~fzhen/dcx/</p> | | | | | |
| <p>其它 (More)</p> | | | | | | |
| <p>备注 (Notes)</p> | <p>考核方式及考核方式中各项比例根据教学实践可能有所调整。</p> | | | | | |