

# Course Plan: PHY-765 - Gravitational Lensing (GL)

Version: April 9, 2019

Lecture plan subject to change. See [https://kasperschmidt.github.io/teaching/SS19\\_GravLens\\_UP765](https://kasperschmidt.github.io/teaching/SS19_GravLens_UP765) for details.

Week Date Time	Lecture	Exercise/Seminar	Location
<b>1</b> April 10 8:00-10:00	<u>Slides</u> Intro & Early days of GL	<u>Worksheet</u> (Literature searches and first lenses)	2.28.2.011
<b>2</b> April 17 8:00-10:00	<u>Slides</u> Light deflection and basic GL geometry	<u>Worksheet</u> (Select poster topic for presentation)	2.28.2.011
<b>3</b> April 24 8:00-10:00	<u>Slides</u> The lens equation	<u>Worksheet</u> (Continue work on poster)	2.28.2.011
<b>4</b> May 1 8:00-10:00	Holiday - no lecture. Compensated by 5-10 minutes longer days weeks 1-15		N/A
<b>5</b> May 8 8:00-10:00	<u>Slides</u> Multiple images	<u>Worksheet</u> (Poster presentations)	2.28.2.011
<b>6</b> May 15 8:00-10:00	<u>Slides</u> Time delays	<u>Worksheet</u> ("Journal club" allocation 1)	2.28.2.011
<b>7</b> May 22 8:00-10:00	<u>Slides</u> Magnifying sources	<u>Worksheet</u> (Present "journal club" papers 1)	2.28.2.011
<b>8</b> May 29 8:00-10:00	<u>Slides</u> Finding (strong) gravitational lenses	<u>Worksheet</u> (Paper review)	2.28.2.011
<b>9</b> June 5 8:00-10:00	<u>Slides</u> Microlensing	<u>Worksheet</u> ("Journal club" allocation 2)	2.28.2.011
<b>10</b> June 12 8:00-10:00	<u>Slides</u> Searching for extrasolar planets with GL	<u>Worksheet</u> (Present "journal club" papers 2)	2.28.2.011
<b>11</b> June 19 8:00-10:00	<u>Slides</u> Modeling Gravitational Lenses	<u>Worksheet</u> (Select topic and prepare for 'talk')	2.28.2.011
<b>12</b> June 26 8:00-10:00	<u>Slides</u> Weak Gravitational Lensing	<u>Worksheet</u> (Science presentations w. slides)	2.28.2.011
<b>13</b> July 3 8:00-10:00	<u>Slides</u> Cosmic Shear and the CMB	<u>Worksheet</u> (Select and start preparing outreach)	2.28.2.011
<b>14</b> July 10 8:00-10:00	<u>Slides</u> The future of GL	<u>Worksheet</u> (Finish outreach)	2.28.2.011
<b>15</b> July 17 8:00-10:00	<u>Slides</u> Summary, loose ends and Q&A	<u>Worksheet</u> (Outreach presentations)	2.28.2.011

**Potential Examination:**  
**45 min. oral examination**  
**20 min presentation w. topics known in advance + Q&A.**