

Astrophysics and Molecular Physics

Module No.: MN-P-SP-Astro, MN-P-SP-Mol, MN-P-PN-Astro, MN-P-PN-Mol, MN-P-WaMa

Version: 17.01.2014 PS

Course: Star Formation

Lecturers: Peter Schilke

Email: schilke@ph1.uni-koeln.de

| Category | Type | Language | Teaching Hours | CP | Semester |
|--------------------|---------|----------|----------------|-----|----------|
| Specialized Course | Lecture | English | 2 | 3 | SuSe |
| Specialized Course | Lecture | English | 2+1 | 4.5 | SuSe |

Requirements for participation:

Astrophysics I (Advanced Astrophysics recommended)

Type of module examinations:

One oral examination at the end of the module

Duration of the course:

1 semester

Aims of the course:

Understanding of fundamental concepts of star formation in a variety of environments.

Contents of the course:

The lecture introduces the basic aspects of Star Formation:

Physical Processes in the ISM, Interstellar Chemistry, ISM and Molecular Clouds, Equilibrium Configurations and Collapse, Protostars, Formation of High Mass Stars, Jets, Outflows, Disks, Pre-main sequence stars, Initial Mass Function, Structure of the Galaxy, Starburst Galaxies, Star Formation in the early Universe

Recommended literature:

Palla and Stahler, Formation of Stars (Wiley)

Carroll and Ostlie, An Introduction to Modern Astrophysics (Addison-Wesley)

Shu, The Physics of Astrophysics I & II (University Science Books, Mill Valley)

Tielens, The Physics and Chemistry of the Interstellar Medium (Cambridge University Press)

Spitzer, Physical Processes in the Interstellar Medium (Wiley)

Unsöld and Baschek, Der neue Kosmos (Springer, Berlin)