Övningsplan, lp 4 – 2022

Uppgifter från kursbok: *Electrical Engineering, 6th Int. Edition*

och kompendier

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| **kalender-vecka**  **(läsvecka)** | **Datum**  **Tid** | **Kod**  D: *demo*  Ö: *övning/ räknestuga)* | **Innehåll** | **Förslag på uppgifter för självstudie** |
| **v 13**  **(lv 2)** | Mån 28/03  8-10 | D1 | P1.38, P1.43, P1.67, P1.75, P2.8a  *(Ström, spänning, Kirchhoffs lagar, DC analys)* | P1.7, P1.9, P1.21, P1.28, P1.35, P1.37, P1.41, P1.42, P1.62, P1.63, P1.64, P1.70, P1.71, **T1.2, T1.3, T1.4**, P2.1, P2.3, P2.4, P2.23, P2.24, P2.26, P2.35, P2.36, P2.37, P2.38, P2.44 |
| Tor 31/03  15:15-17 | Ö1 | P1.42, P1.57, P1.63, P2.23  *(DC kretsanalys)* | P2.49, P2.58, P2.83, P2.84, P2.97, P2.98, **T2.2, T2.5, T2.6**, P3.6, P3.24, P3.60, P4.4, P4.21 |
| Fre 01/04  8–10 | D2 | P2.53, P2.86, P2.57, P3.14, P4.3  *(Ekvivalenta kretsar, diff. Ekvationer. Tidsvarierande strömmar och spänningar.)* |
| **v14**  **(lv 3)** | Tor 07/04  15:15-17 | Ö2 | P2.83, P 2.95, P 2.92, P2.91, P *2.90 , P2.97 (Ekvivalenta kretsar DC)* | 1a: 1, 2, 4, (6); 1c: 1,2; 1d: 1,2, 5; 1e: 2; 2a:1,3; 2b: 1,2,4; 2d: p-1, p-2, p-3, p-4;  3a: A-1, C-1, C-3, C4, D-1; 3b: C-1, C-2, C-3; 3c: 1 |
| Fre 08/04  8–10 | D3 | 1c: 3,1d: 3, 1e: 4  2a: 6; 2b: 5  *(Elektriska fält)* |
| **v15-16**  **(lv 4-6)** | *Påsk, break* | | | |
| **v 17**  **(lv 6)** | Tor 28/04  15:15-17 | Ö3 | 1a:1; 1d:5; 1e:1; 2a:12; 2b:7; 2a:10 (Elektriska fält) | 4c: C-1, C-2; 4d: C-1; 4e: |
| Fre 29/04  8–10 | D4 | 3a: C-2; 3b: C-4; 3c: 2,6; 4a: 1  *(Magnetfält)* |
| **v18**  **(lv7)** | Tor 05/05  15:15-17 | Ö4 | 3a:P-3; 3a:P-4; 3c: 6; 3a:E3; 3C:E4 (Magnetfält) | P5.4, P5.6, P5.21, P5.22, P5.32, P5.33, P5.40, P5.42, P5.45, P5.63, **T5.2, T5.3, T5.4, T5.5** |
| Fre 06/05  8–10 | D5 | P4.23, 5.49, 5.53, P5.50, P5.69  *(Beräkningsmetoder för AC-kretsar)* |

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| **v 19**  **(lv 8)** | Tor 12/05  15:15-17 | Ö5 | P5.38, 5.48, P5.40, P5.42, P5.45,  *(Beräkningsmetoder för AC-kretsar)* | P6.71 (bara resonansvinkelfrekv.)  P6.79 (bara resonansvinkelfrekv.) |
| Fre 13/05  8–10 | D6 | P5.67, P5.64, P5.86, P6.72, E6.16  *(Effekt i AC-kretsar, resonans)* |
| **v20**  **(lv9)** | Tor 19/05  15:15-17 | *Ö6* | P5.65, P5.83a, E6.11, E6.12,  P6.75, E14.1, E14.2, E14.3, P14.6, P14.9, P14.19, P14.30  *(Effekt i AC-kretsar, resonans , Operationsförstärkare)* | E14.5, E14.16, P14.17, P14.18, P14.20, P14.34, T14.2 |
| Fre 20/05  8-10 | D7 | E14.4, E14.6, E14.17, P14.10, P14.32  *(Operationsförstärkare)* |

Svar till uppgifter i kursboken finns på bokens *Companion Website*.

Webbadress och accesskod finns i kursboken.

Se TimeEdit för senaste schema.

# Electric fields literature:

As the course literature, the following materials from Physnet are suggested:

<http://www.physnet.org>.

**Lecture 1: Electric field**

1a) Point charge: field and force

<http://www.physnet.org/modules/pdf_modules/m115.pdf>

1b) Coulomb's law

<http://www.physnet.org/modules/pdf_modules/m114.pdf>

1c) Dipole

<http://www.physnet.org/modules/pdf_modules/m120.pdf>

1d) Gauss law: sphere:

<http://www.physnet.org/modules/pdf_modules/m132.pdf>

1e) Gauss law: cylinder:

<http://www.physnet.org/modules/pdf_modules/m133.pdf>

*Additional material to L1:*

Electric force on charged particle

<http://www.physnet.org/modules/pdf_modules/m411.pdf>

E-field:

<http://www.physnet.org/modules/pdf_modules/m419.pdf>

**Lecture 2: Potential**

2a) Potential

<http://www.physnet.org/modules/pdf_modules/m116.pdf>

2b) Energy in E-field

<http://www.physnet.org/modules/pdf_modules/m117.pdf>

2c) El. properties of materials

<http://www.physnet.org/modules/pdf_modules/m421.pdf>

2d) Capacitance

<http://www.physnet.org/modules/pdf_modules/m422.pdf>

2e) Current

<http://www.physnet.org/modules/pdf_modules/m423.pdf>

2f) Resistivity

<http://www.physnet.org/modules/pdf_modules/m424.pdf>

*additional material to L2:*

Electric potential

<http://www.physnet.org/modules/pdf_modules/m420.pdf>

Capacitance & capacitors

<http://www.physnet.org/modules/pdf_modules/m135.pdf>

**Lecture 3: Magnetic field**

3a) Magnetic field

<http://www.physnet.org/modules/pdf_modules/m426.pdf>

3b) Magnets

<http://www.physnet.org/modules/pdf_modules/m366.pdf>

3c) Ampere's law

<http://www.physnet.org/modules/pdf_modules/m138.pdf>

**Lecture 4: Induction & EM waves**

4a) Faraday's law

<http://www.physnet.org/modules/pdf_modules/m142.pdf>

4b) Self-inductance and inductors

<http://www.physnet.org/modules/pdf_modules/m144.pdf>

4c) EM waves & Maxwell

<http://www.physnet.org/modules/pdf_modules/m429.pdf>

4d) Waves: basic properties

<http://www.physnet.org/modules/pdf_modules/m430.pdf>

4e) Wave equation

<http://www.physnet.org/modules/pdf_modules/m201.pdf>