

GRUBER & PETERS

Untis
User Manual

Untis User Manual

grupet.at

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1 Stamdata

1.1 Forord

I løbet af sine mere end tredive års udvikling er gp-Untis vokset til et meget omfattende stykke værktøj. Den rigdom af funktioner og indstillinger - og ikke mindst omfanget af denne vejledning - kan derfor på nye kunder måske virke lidt afskrækkende.

Af denne grund anbefaler vi også, at du studerer det meget tyndere hæfte "Introduktionsmanual til Untis" nøje. Dette fører dig med letforståelige eksempler gennem alle trin i skemaplanlægningen med Untis: Fra installation af programmet over indtastning af skoledata til indtastning af skolens stamdata. Videre over indtastning af undervisning, den egentlige skemalægning ved hjælp af Optimering , diagnose af den beregnede lektionsplan og eventuelle manuelle ændringer og endelig til print af de færdige skemaer for lærere, klasser og lokaler.

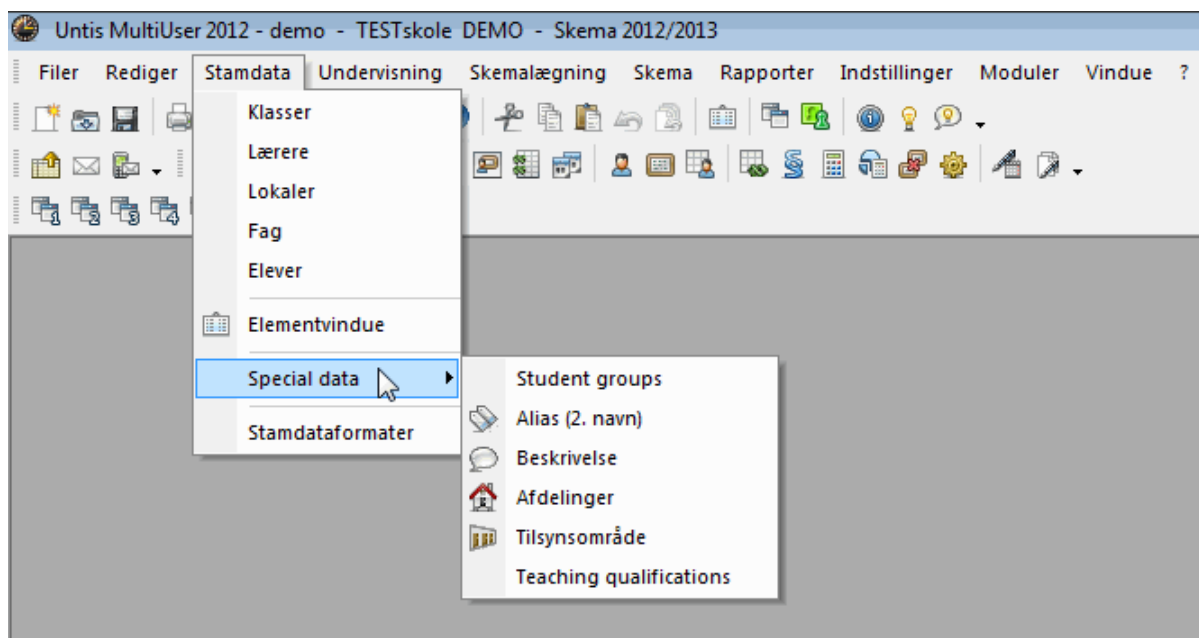
Også den herværende vejledning er bygget op efter denne struktur, men den er ment mere som reference og opslagsværk end som egentlig vejledning.

Brug derfor denne vejledning, hvis du under arbejdet med dit skema støder på situationer, der ikke er behandlet i introduktionsmanualen, eller til i ro og mag at lære de mere avancerede funktioner i Untis og dermed blive i stand til at bruge værktøjet mere effektivt.

1.2 Stamdata

I dette kapitel beskrives indtastning og vedligeholdelse af stamdata samt deres egenskaber.

'Stamdata' er de grundlæggende data, der er nødvendige for skemalægning af undervisningen på en skole. Det er de [lærere](#) , [klasser](#) , [klasselokaler](#) og [fag](#) , som er grundlaget for undervisningen, men også vigtige oplysninger om [elever](#) , [alternative lokaler](#) , [afdelinger](#) og [ferier](#) . Generelt kan du, via menupunktet 'Stamdata' i hovedmenuen og aktivering af de tilhørende undermenuer, indtaste nye stamdata eller ændre på eksisterende stamdata.



Et nedtonet menupunkt p ager, at funktionen er inaktiv. Generelt er dette tilf eldet, n r der er brug for et till gsmodul fra standardpakken Untis.

Om at oprette punkter i menuen:

Via undermenupunktet 'Stamdataformater' kan poster tilf jes, der ikke vises som standard i din menu. I kapitlet 'Stamdataformater' vil blive vist, hvordan du kan tilf je dine egne menupunkter.

I 'Stamdata' har klasser, l rere, lokaler og fag en s rlig betydning, da de som n vnt ovenfor fastl gger undervisningen. Derfor bruges ofte for denne stamdatatype betegnelsen *Elementer*.

Alle stamdata bearbejdes i s kaldte *Visninger*. Disse visninger er vinduer, hvor du kan indtaste nye og  ndre eksisterende stamdata. Alle stamdatavinduer bearbejdes generelt ens, s  i det f lgende beskrives lighedeme mellem forskellige stamdatavisninger.

Udover disse elementvinduer findes ogs  et overordnet 'Elementvindue'.

1.3 Stamdataformater

Hvert stamdataelement ([Klasser](#) , [L rere](#) , [Lokaler](#) , [Fag](#) og [Elev](#)) kan bearbejdes i egen visning.

Alle stamdatavinduer/-visninger best r af tre dele: [Menulinje](#) , [Listevisning](#) og [Kartotekskortvisning](#) .

Listevisning

Listevisningen er linjeorienteret. Ny linje for hvert nyt element. For hvert element vises de egenskaber, du som bruger har aktiveret i visningen. I eksemplet er dette: Betegnelse, Hele navnet, Reservelokale og Lokalev gt.

Kartotekskortvisning

Kartotekskortvisningen er elementorienteret. I denne visning ses et element med alle dets egenskaber.

OBS!

Du kan åbne og lukke kartotekskortvisningen ved at klikke på pilen nederst til venstre i Listevisningen.

The screenshot shows the 'Lokale / Lokale' application window. The main area displays a list of rooms with columns for 'Betegnelse', 'Hele navnet', 'Reservelokale', and 'Lokalevægt'. Below the list is a card view for the selected room 'Id2'. A red box highlights a small icon (a square with a cross) at the bottom left of the list view, which is used to toggle between list and card views. Red callouts on the right side of the image identify the 'Menulinje' (menu bar), 'Listevisning' (list view), and 'Kartotekskortvisning' (card view).

Betegnelse	Hele navnet	Reservelokale	Lokalevægt
Id1	Idrætssal 1	Id2	4
Id2	Idrætssal 2	Id1	4
Fys	Fysiklokale		3
Slø	Sløjdsal		3
Hån	Håndarbejde		4
Køk	Skolekøkken		4
K1a	Klasselokale 1a	K1b	2
K1b	Klasselokale 1b	K2a	2
K2a	Klasselokale 2a	K2b	2
K2b	Klasselokale 2b	K3a	2
K3a	Klasselokale 3a	K1a	2
Ps1	Pseudolokale 1 (3b)	K1a	2
Ps2	Pseudolokale 2 (4)	K2a	2

I det følgende behandles disse temaer:

[Menulinje](#)

[Indtastning af data](#)

[Tilpasse visninger](#)

Administrere visninger

Print

1.3.1 Funktionerne i Værktøjslinjen

Følgende munuknapper finder du i mange Untis-vinduer:



Vis normalform

Denne funktion tilpasser den ydre vinduesramme til de valgte kolonnens antal og bredde.

Feltvalg Denne funktion detalje-beskrives i kapitlet [Individuelt valg af datafelter](#) .

Ny

Denne knap åbner et nyt element. Nøjere forklaring findes i kapitlet 'Indtastning af data'.

Slet

Denne funktion sletter det aktive element. Du kan slette flere ad gangen ved først at markere de ønskede og dernæst bruge knappen.

Serieændre

Med denne funktion kan du præcist ændre indholdet af ét felt i alle linier af listevisningen på én gang. Denne funktion er specifikt beskrevet i kapitlet [Serieændre](#) .

Sorter

Her drejer det sig om den automatiske og permanente sortering, som behandles i kapitlet [Sortering af elementer](#) .

Felter med indhold

Denne yderst nyttige funktion aktiverer i listevisningen midlertidigt alle de kolonner, som har mindst ét feltindhold. Et klik mere på denne knap, og du er tilbage til den oprindelige visning.

Lås visning

Er denne funktion aktiveret, forbliver den aktuelle visning uberørt af ændringer i andre visninger. Den automatiske synkronisering er hermed ude af funktion.

<Tidsønsker

Via denne funktion indtastes tidsønsker. Gradueringen for tidsønsker går fra '-3' (total spærring) til '+3' (et meget stærkt ønske om aktivitet). Da tidsønsker er af central betydning for alle elementer såvel som for undervisningen, er kapitlet [Tidsønsker](#) i 'Anvendelsesinstruktioner' dedikeret denne funktion.

Elementets farve

Ved hjælp af denne knap kan du tildele ethvert element (undervisning) en selvvalgt forgrunds- og baggrundsfarve. Disse farver vil blive anvendt / vist på skærmen i standardvisningen af skemaet såvel som i visningen af skemalægningsværktøjerne [Skemadialog](#) og [Planlægnings-skema](#) . I andre moduler af Untis - som f.eks. modulet [Vikarhåndtering](#) - vises elementerne også i farver de relevante steder.

Tips: Farvelægge flere elementer

Du kan farvelægge flere elementer ad gangen med samme farvekode ved at markere dem først og dernæst klikke på farveknappen.

OBS! Ingen farver på print

Ønsker du IKKE at få printet farverne med ud, skal du vælge 'Sort-hvid udskrift' for den enkelte visning (under 'Indstilling af skema | Layout 2 | Udskriv').

Sidelayout (Page layout)

Her vælger du indstillinger for dit print, og du kan samtidigt se, hvordan det vil blive printet ud. Mere

herom findes i kapitlet [Print](#) .

Indstilling

Via knappen 'Indstilling' kan du vælge skrifttype, -størrelse og lignende.

Opdatér vindue

Visningen opdateres. Alternativt kan du klikke på 'F5'-tasten.

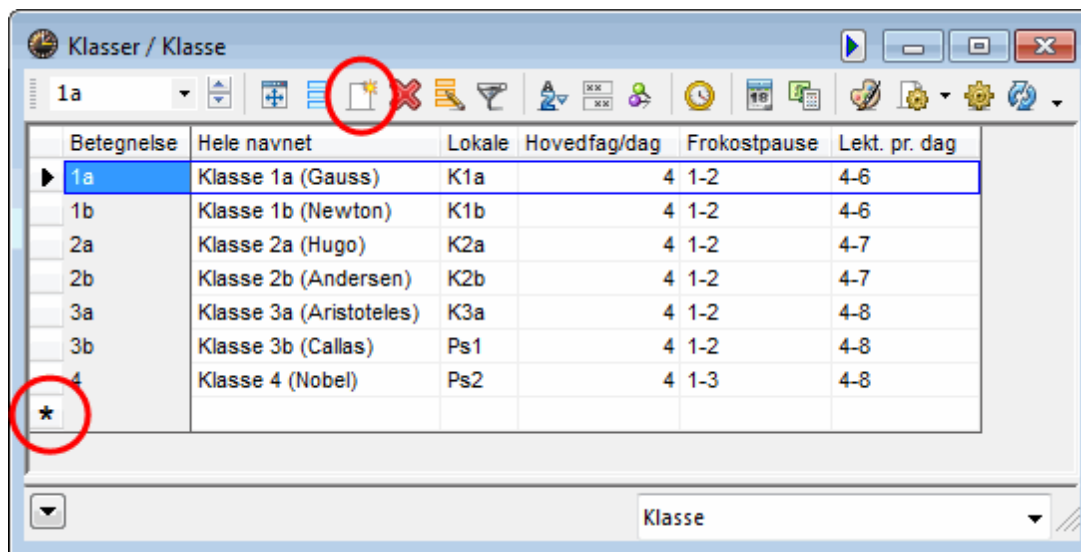
1.3.2 Indtastning af data

Indtastning af nye elementer i Stamdatavisningerne sker altid i den nederste linje, som er markeret med en '*'.

Alternativt kan menuknappen 'Ny' anvendes. Cursoren placeres derved automatisk i den nederste frie linje af Listevisningen.

Bekræftelse af indtastning

Bekræft altid din indtastning med 'Enter' eller 'Tab', ellers gemmes det sidst indtastede ikke.



For at foretage yderligere indtastninger flyttes cursoren med mus eller piletaster til de efterfølgende felter.

OBS! Ændring af 'Betegnelse'

Du kan ændre betegnelsen for et element ved at dobbeltklikke i kolonnen 'Betegnelse' ud for det givne element.

1.3.3 Tilpasse visninger

I hvert stamdatavindue findes der mange forskellige kolonner. De færreste har behov for dem alle. Derfor kan du selv vælge, hvilke kolonner der skal vises.

Herudover har du mulighed for sortering af rækker og kolonner.

1.3.3.1 Individuelt valg af datafelter

Grundlæggende har du to forskellige måder, hvorpå du kan vælge datafelter: Via 'Feltvalg' eller 'Kartotekskortvisning'.

OBS! - 'Felter med Indhold'



Ved klik på menuknappen 'Felter med indhold' vises alle de kolonner, hvor der mindst er én indtastning. Denne funktion egner sig til at finde eventuelle fejlindtastninger.

Feltvalg

Klik på menuknappen 'Feltvalg' og sæt efterfølgende et hak i kolonnen 'Aktiv' ud for de ønskede kolonner.

OBS! - yderligere muligheder

Via 'Feltvalg' kan du også beslutte, om en kolonne skal med i print, eller om 'Betegnelse'/'Hele navnet' skal anvendes for et element.

The 'Feltvalg' dialog box contains the following fields and their selection status:

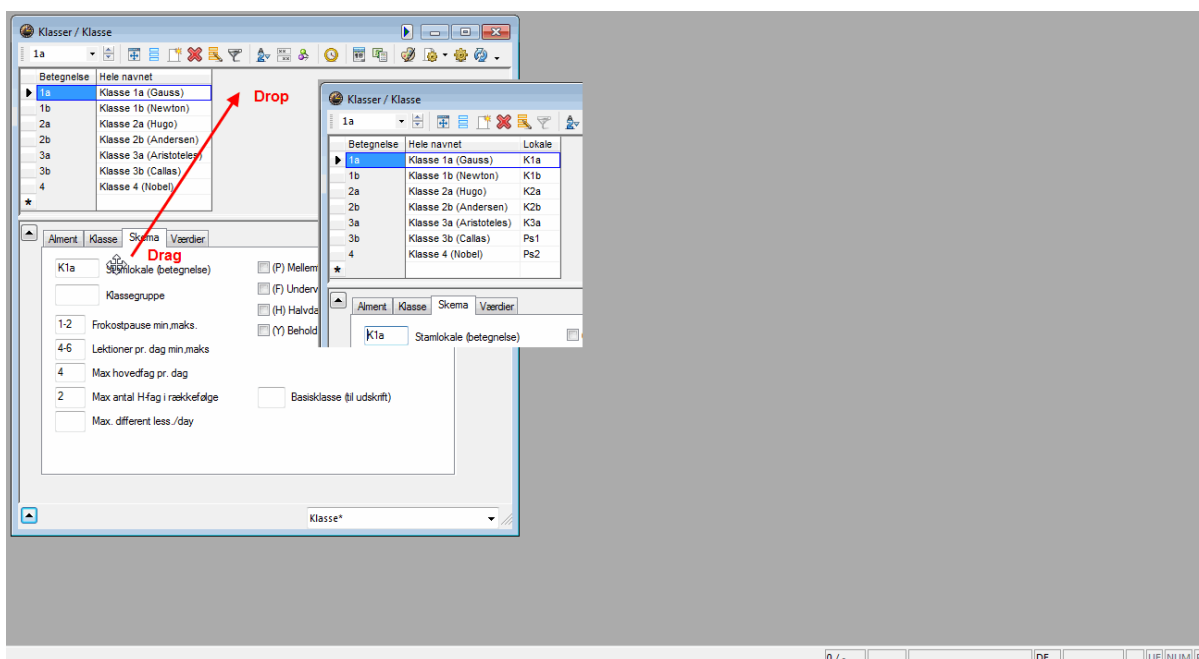
Felt	Aktiv	udskriv	Navn
Betegnelse	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Efternavn	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tekst	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beskrivelse	<input type="checkbox"/>	<input type="checkbox"/>	Betegnelse
Afdeling	<input type="checkbox"/>	<input type="checkbox"/>	Betegnelse
Alias (Andet navn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basisfelter			
Skema			
M.t.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Max antal lekt. i rækkefølge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fri i yderlekt.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lærer-optimerings-kendetegn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frokostpause min,maks.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lektioner pr. dag min,maks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mærker			
Tjenestetidsberegning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pausetilsyn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Driftsmodul (Vikarhåndtering)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tæller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The 'Lærere / Lærer' application window shows a table of teachers with the following data:

Betegnelse	Efternavn	Lokale	Mellemtimer	Lekt. pr. dag	Frokostpause
Gauss	Gauss	0-3	2-6	1-2	
New	Newton	0-1	4-6	1-2	
Hugo	Hugo	0-1	4-7	1-2	
Ander	Andersen	0-1	4-6	1-3	
Arist	Aristoteles	0-1	4-6	1-2	
Callas	Callas	0-1	4-6	1-2	
Nobel	Nobel	0-1	4-6	1-2	
Rub	Rubens	0-1	4-7	1-3	
Cer	Cervantes	0-1	4-7	1-2	
Curie	Curie	0-1	4-7	1-3	

Fra Kartotekskortvisning

Før cursoren hen over det ønskede datafelt i Kartotekskortvisningen. Herved bliver cursoren til en fire-retnings-pil. Du kan nu med 'drag&drop' føre datafeltet op i Listevisningen, hvorved det vises som en ny kolonne.



For at slette en kolonne: Hold 'Ctrl'-tasten nede mens du trækker kolonneoverskriften retur til Kartotekskortvisningen.

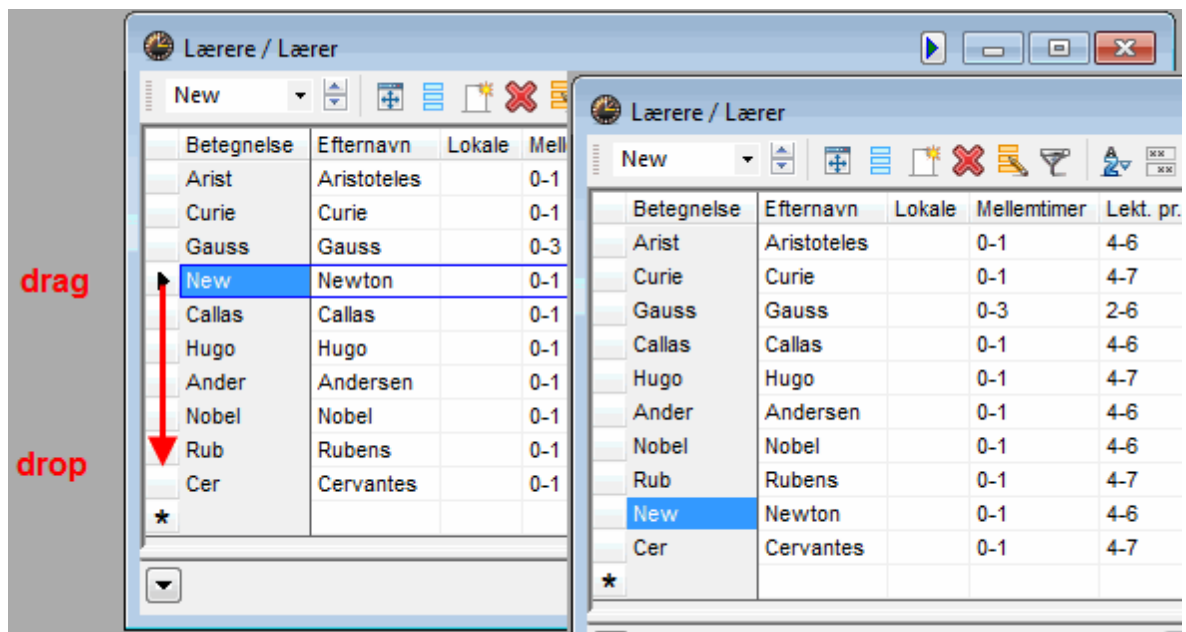
1.3.3.2 Sortering af elementer

I 'Stamdata'-visningen har du tre forskellige sorteringsmuligheder til rådighed.

Manuel sortering med 'drag&drop'.

Vil du flytte et element i 'Listevisning', "tager du fat" i elementet i kolonnen helt ude til venstre, holder venstre museknap nede og trækker elementet til den ønskede placering i listen.

Rækkefølgen af kolonner kan ændres med samme fremgangsmåde.

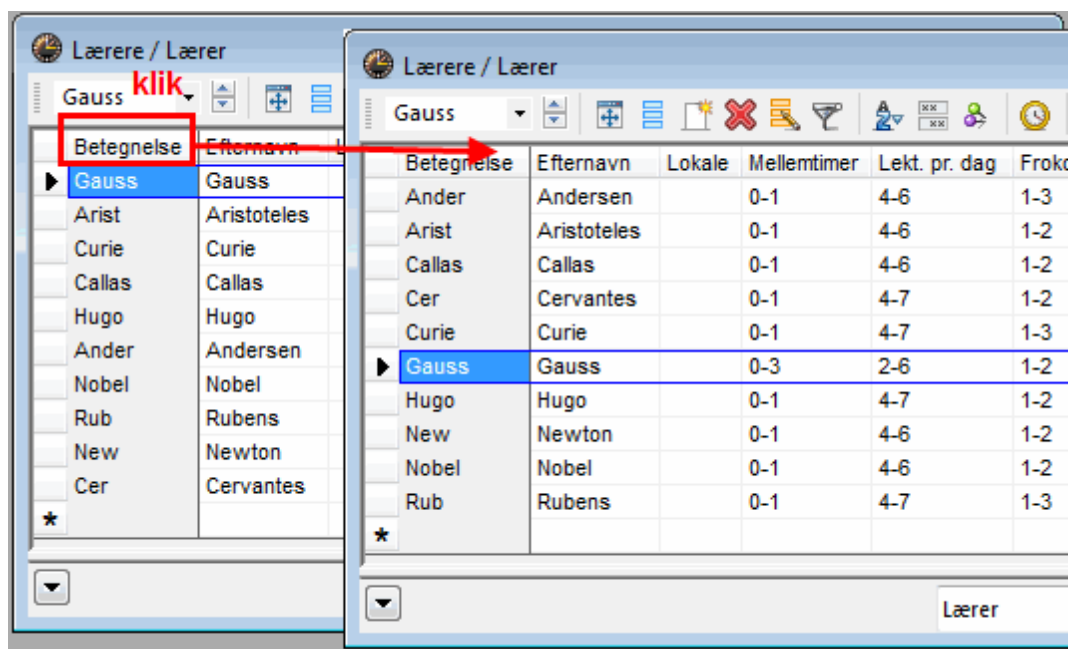


Automatisk midlertidig sortering

Med et museklik i kolonneoverskriften sorteres tabellen efter indholdet i den valgte kolonne. Et yderligere museklik og tabellen sorteres 'faldende' efter den valgte kolonne.

Vær opmærksom: Midlertidig

Lukkes og åbnes visningen er du tilbage til 'normal' rækkefølge i tabellen.



Automatisk permanent sortering



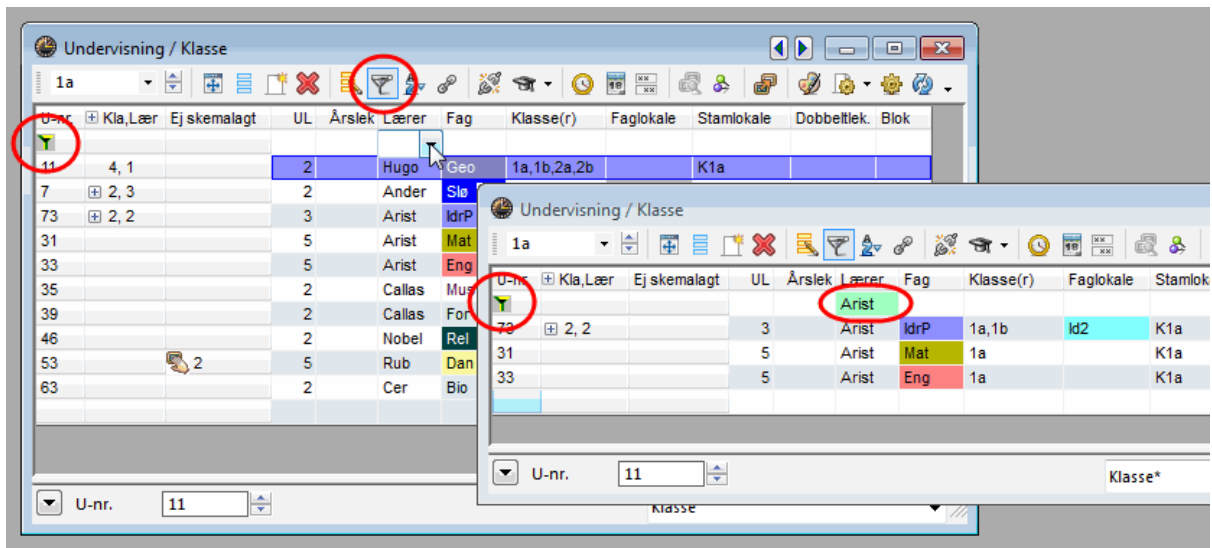
Når du klikker på menuknappen 'Sorter', åbnes et nyt vindue, hvori du kan vælge op til fem forskellige sorteringskriterier i hierarkisk orden.

Vælg nu blot, hvilke kriterier visningen skal sorteres efter. Ved at sætte hak ud for 'Brug denne sortering i alle drop-down menuer' (Use this sorting in all drop-down menus) vil denne sortering blive anvendt alle steder i programmet, hvor de pågældende elementer vises på listeform.

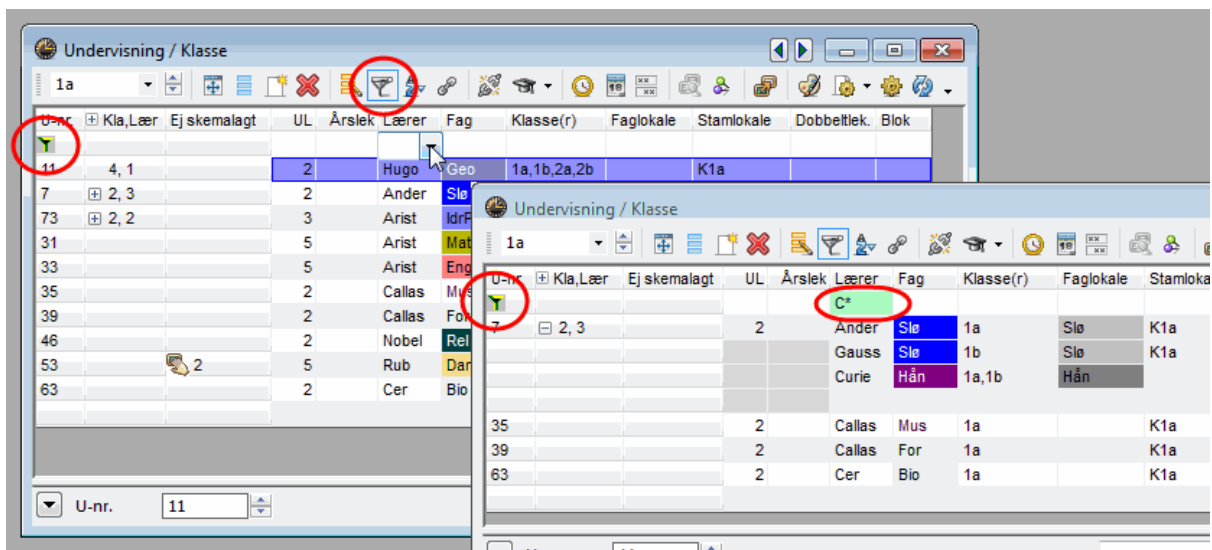
1.3.3.3 Filtre

Hvis du vil lægge et filter med et eller flere kriterier over en bestemt visning, kan det gøres simpelt og hurtigt via filterfunktionen.

Klik på menuknappen 'Filter' og der fremkommer en ny linje med filtersymbolet mellem kolonneoverskrifterne og tabelindholdet. I denne linje indtaster du i den aktuelle kolonne dit filterkriterium. Du kan også anvende flere filtre samtidigt (matematisk 'både-og...'). Eksemplet findes via 'Undervisning | Klasser'.



OBS! Pladsholder
 Bemærk at du ved filtreringen kan anvende pladsholderne '?' og '*', som kan stå for ét eller flere vilkårlige bogstaver / tal. Koblingen for undervisning nr. 7 er i eksemplet åbnet, så det ses, at denne er med i udtrækket på grund af lærer Curie.

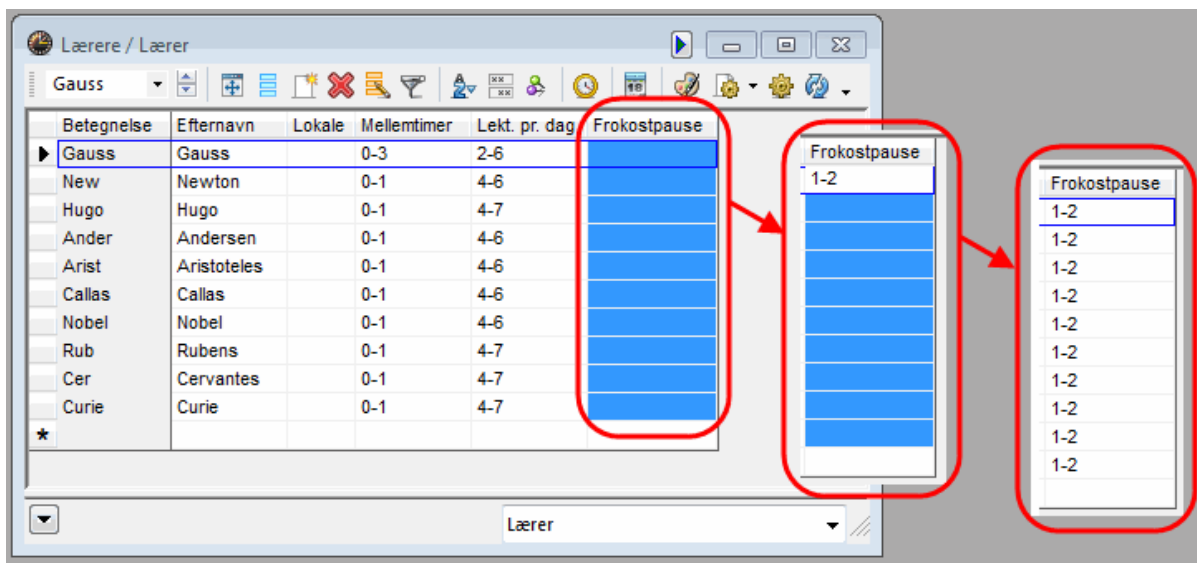


1.3.3.4 Serieændringer

I Untis er der to muligheder for at serieændre.

Via markering

Marker med cursoren det ønskede område, så felterne bliver blå. Indtast uden yderligere klik den ønskede værdi, og den vil nu fremstå i alle markerede felter.

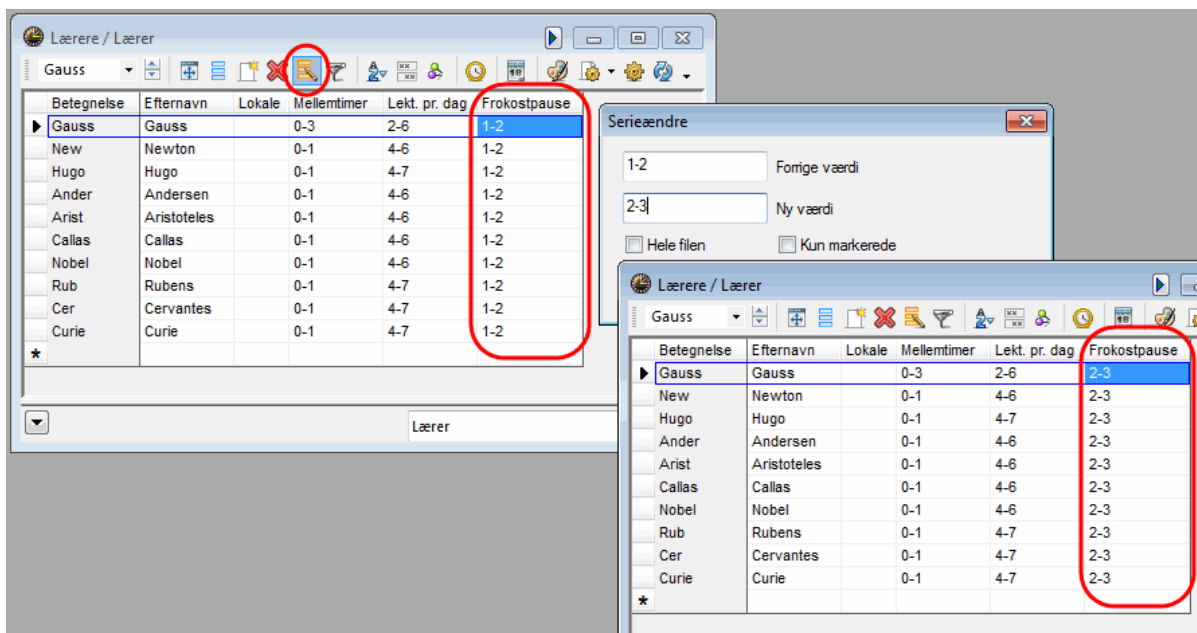


OBS! - Markere

Du kan også markere med tastaturet: Brug 'Shift'+pil op' eller 'Shift'+pil ned'.

Via funktionen 'Serieændring'

I visningens menulinje finder du knappen 'Serieændre'. Når du klikker på den, kan du i serieændrings-dialogboksen indtaste/se den gamle værdi i 'Førrige værdi', og det den skal ændres til i 'Ny værdi'.



Ændringer sker normalt kun for elementerne i visningen, medmindre du har vinket af i 'Hele filen', hvorved

du opnår, at ændringen sker for alle elementer af den aktuelle type.

Har du markeret enkelte elementer, kan du, ved at vinge af i 'Kun markerede', nøjes med at ændre de udvalgte elementer.

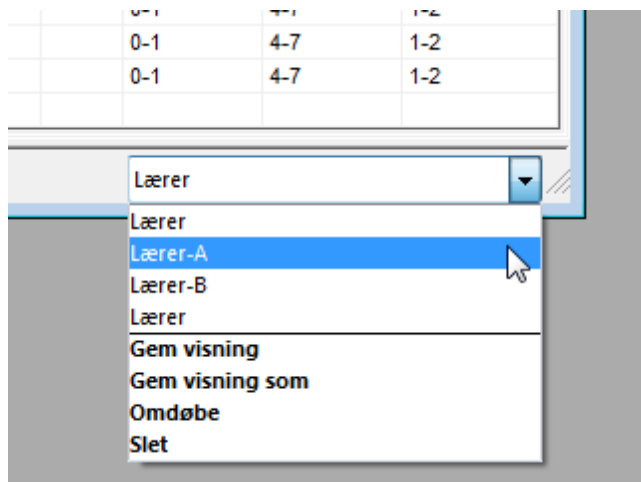
1.3.4 Administrere visninger

Du kan ændre, slette eller oprette visninger. Du kan definere standardvisninger og udvide stamdata-menuen med udvalgte visninger.

Styringen af visnings-administrationen finder du enten i drop-down-listen nederst til højre i de enkelte stamdata-visninger eller i menupunktet 'Stamdata | Stamdataformater'.

Drop-down-listen

Via drop-down-listen nederst til højre i stamdata-visningerne kan du skifte mellem de allerede eksisterende visninger for dette vindue, gemme, ændre, navneændre eller slette visninger. Punktet 'Gem visning som' skaber en ny visning, som herefter vil fremstå i den øverste del af drop-down-listen.

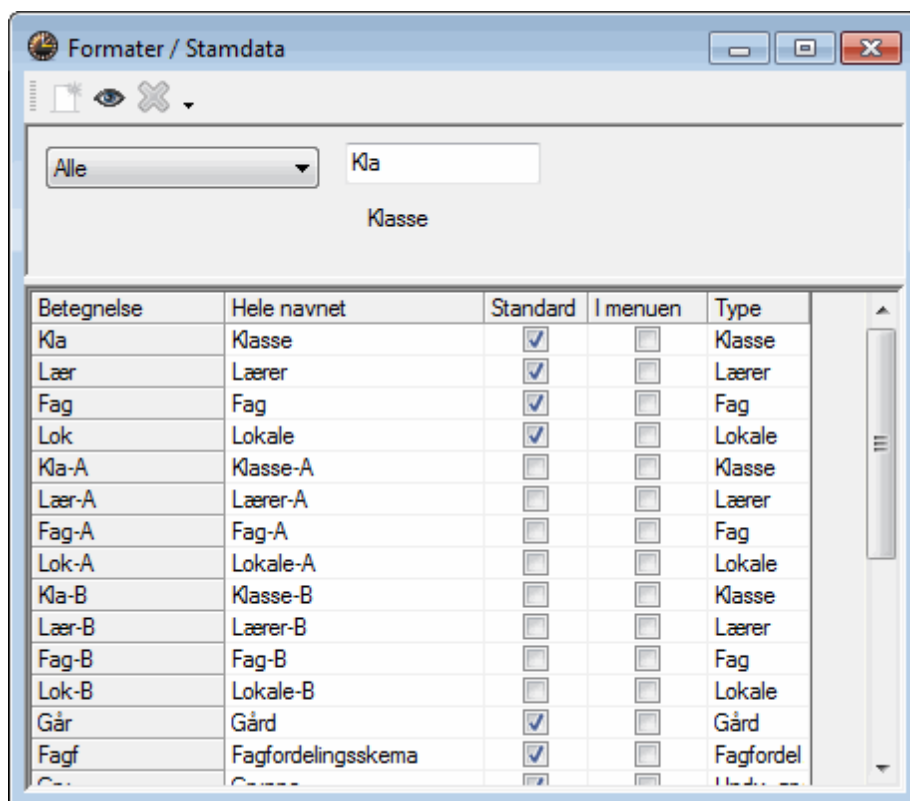


OBS! - Ændret visning

Så snart du har ændret en visning, dukker en '*' op ved navnet i drop-down-listen. Du kan nu gemme visningen med ændringer - eller via 'Gem visning som' oprette en ny visning.

Stamdataformater / Undervisningsformater

Via menupunktet 'Stamdata | Stamdataformater' (og også 'Undervisning | Undervisningsformater') fremkommer en komplet liste med alle stamdata-visninger.



Via kolonnen 'Standard' kan du vælge, hvilke visninger der skal åbnes som standard.


Vil du inddrage yderligere visninger i Stamdata-menuen, vinger du bare den ønskede visning af i kolonnen 'I menuen'.

Via knapperne i menu-linjen i denne visning kan du oprette, åbne eller slette en visning.



1.3.5 Print

Der findes to måder at foretage indstillinger for print.

1. [Sidelayout - Page layout](#)

I hvert stamdata- og undervisningsvisning finder du menuknappen 'Page layout' . Her kan du foretage indstillinger for print og samtidigt se resultatet.

2. [Vis udskrift](#)

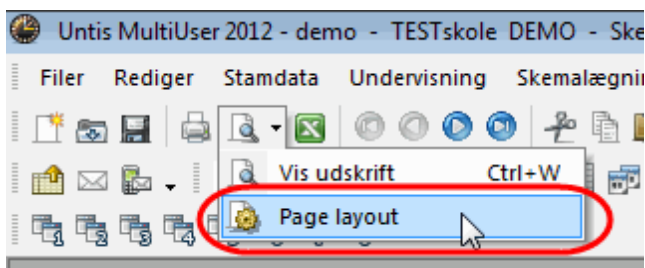
Når en visning er aktiv (du har klikket på den), kan du via menuknappen 'Udskriv'  eller 'Vis udskrift'  i hovedmenuen åbne 'Udskriftsmenu'-dialogen.

OBS! - Kopier til 'Udklipsholder'.

Du kan markere en tabel helt eller delvist og med 'Ctrl+C' og 'Ctrl+V' indsætte den i en tekstbehandler eller et regneark.

1.3.5.1 Sidelayout - Page layout

For alle visninger (Stamdata, Undervisning og Vikarhåndtering) har du via menuknappen 'Sidelayout' mulighed for at indstille printet for de enkelte lister. Denne menuknop findes såvel i menulinjen for den enkelte visning som i hovedmenulinjen (under 'Vis udskrift').



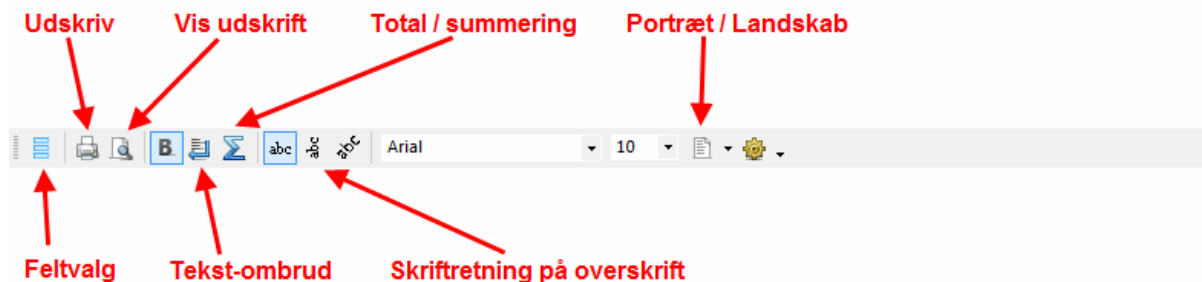
Eksemplet viser en liste med undervisningen for 1a. Via menulinjen for 'Sidelayout' kan samtlige for printet relevante indstillinger udføres.

Via menuknappen 'Udvalg' kan du vælge de elementer, der skal printes.

Skal en kolonne printes ud med fed skrift, klikker du i kolonnen og klikker dernæst på menuknappen 'B'.

Element header	1a Klasse 1a (Gauss)										
Kolonneoverskrift	U-nr.	Kla,Lær	Ej skemalagt	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek.
	11	4, 1		2		Hugo	Geo	1a,1b,2a,2b		K1a	
	7	2, 3		2		Ander	Slø	1a	Slø	K1a	1-1
						Gauss	Slø	1b	Slø	K1a	
						Curie	Hån	1a,1b	Hån		
	73	2, 2		3		Arist	IdrP	1a,1b	Id2	K1a	
						Rub	IdrD	1a,1b	Id1	K1b	
	31			5		Arist	Mat	1a		K1a	
	33			5		Arist	Eng	1a		K1a	
	35			2		Callas	Mus	1a		K1a	
	39			2		Callas	For	1a		K1a	1-1
	46			2		Nobel	Rel	1a		K1a	
	53	2		5		Rub	Dan	1a		K1a	
	63			2		Cer	Bio	1a		K1a	

Betydningen af de enkelte knapper forklares her grafisk:



Hvis du vil ændre en overskrift, klikker du i et af rummene til overskriften og indtaster det ønskede.

Element header	1a Klasse 1a (Gauss)											1a Klasse 1a (G	
Kolonneoverskrift	U-nr.	Kla.	Lær	Ej skemalagt	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek.	Blok
	11	4,	1		2		Hugo	Geo	1a,1b,2a,2b		K1a		
	7	2,	3		2		Ander	Slø	1a	Slø	K1a	1-1	
							Gauss	Slø	1b	Slø	K1a		
							Curie	Hån	1a,1b	Hån			
	73	2,	2		3		Arist	IdrP	1a,1b	Id2	K1a		
							Rub	IdrD	1a,1b	Id1	K1b		

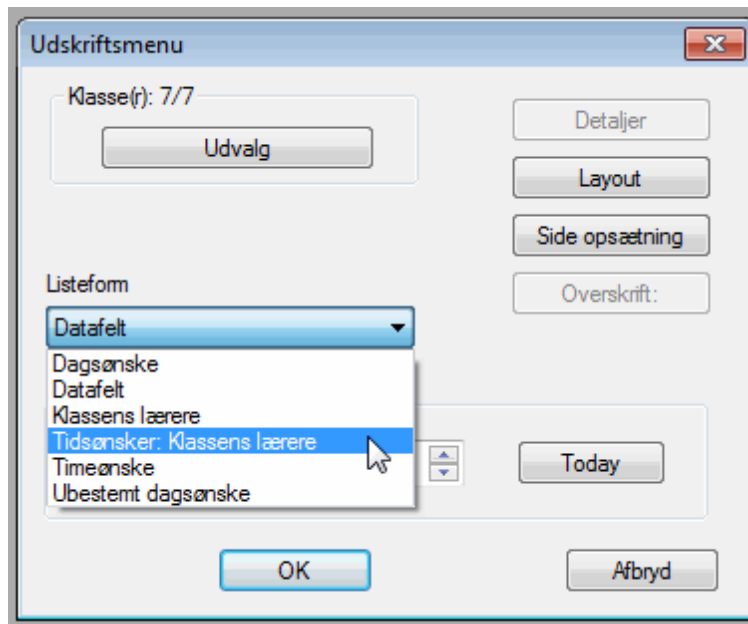
OBS! Sideombrud

Vær opmærksom på, at sideombrydningen også vises i vinduet. På udskriften bliver 'Blok' printet på side 2.

1.3.5.2 Vis udskrift

I denne dialogboks finder du indstillinger, som allerede er set i 'Sidelayout'.

Vær opmærksom på, at der via 'drop-down'-menuen - afhængig af den enkelte visning - gives flere muligheder for print.



Disse printmuligheder beskrives senere i relevante kapitler.

1.4 Stamdataegenskaber

Principielt er det nok at udfylde kolonnen *Betegnelse* for automatisk at kunne generere et skema. Er betydningen af et felt uklar, gælder det som grundregel, at det er bedre ikke at udfylde feltet, end at besværliggøre optimeringsalgoritmen med unødvendige data.

OBS! Indtast kun nødvendigt fra start

Det anbefales nye brugere af programmet kun at udfylde de kolonner, som standard-listevisningen indeholder. De øvrige felter bør først tages i anvendelse efter de indledende optimeringskørsler.

Der er egenskaber, som er relevante for alle stamdata ([Elementuafhængige egenskaber](#)), og egenskaber som er specifikke for det enkelte element. Information herom findes i de relevante kapitler:

[Lokaler](#)

[Klasser](#)

[Lærere](#)

[Fag](#)

1.4.1 Element-uafhængige indtastningsfelter

Her følger en beskrivelse af felter, som du vil finde ved alle elementer.

Betegnelse	Hele navnet	Tekst	Beskrivelse	Statistik	Markeret (m)	Lås (X)	Ignorer (i)	Udskriv ej (N)	(Z)
1a	Klasse 1a (Gauss)	her		r	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1b	Klasse 1b (Newton)	kan		r	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2a	Klasse 2a (Hugo)	du		r	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2b	Klasse 2b (Andersen)	skrive		r	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3a	Klasse 3a (Aristoteles)	hvad			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3b	Klasse 3b (Callas)	du			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
▶ 4	Klasse 4 (Nobel)	vil			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
*					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Betegnelse

Dette er et éntydigt (kort-) navn. Via betegnelsen identificeres elementet i programmet. Indtastning af betegnelsen er strengt nødvendig.

OBS! Ingen ens betegnelser

Det er principielt muligt at give en klasse betegnelsen 1a og samtidigt et lokale betegnelsen 1a. Det er også principielt muligt at have en klasse med betegnelsen 1a og en anden med betegnelsen 1A. Begge dele frarådes på det kraftigste.

Hele navnet

Her kan indtastes et længere og mere informativt navn, som også ses på en udskrift. Denne mulighed er ikke strengt nødvendig men anbefalelsesværdig.

Tekst

Til hvert element kan indtastes en forklarende tekst.

Beskrivelse

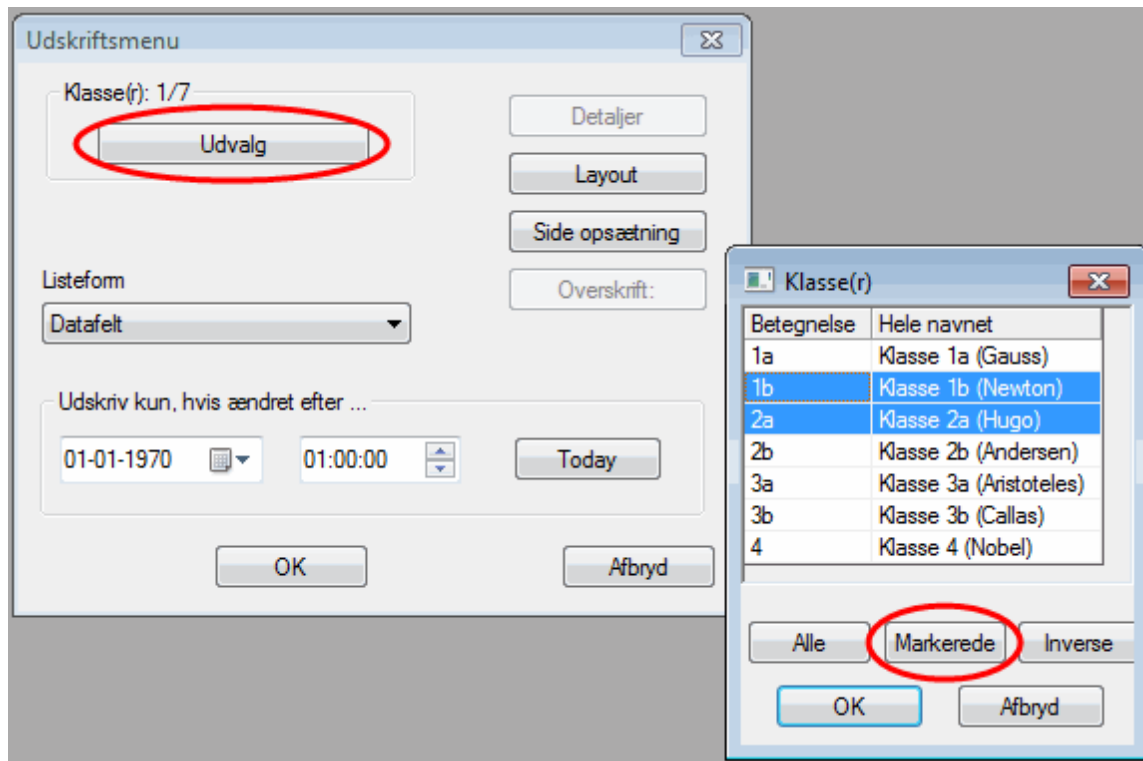
Beskrivelserne er specielle stamdata (find visningen via 'Stamdata | Special data | Beskrivelse') med betegnelser såvel som hele navne. De er nyttige, hvis samme betegnelse bruges for flere elementer. I print og visninger kan du via 'Feltvalg' vælge, om kun betegnelsen eller hele navnet skal printes/vises.

Statistik

For hvert element kan (adskilt med komma) angives flere statistikkoder. Ved hjælp af disse kan du, f. eks. i forbindelse med prints, udtrække veldefinerede undergrupper af dine elementer. Læs mere herom i kapitlet [Filtre](#).

Markeret (m)

En vinge for 'Markeret (m)' kan sættes for alle elementer. For visse funktioner, som f.eks. print (af skemaer eller stamdata) eller [Serieændringer](#), kan du angive, om kun de markerede elementer skal medtages/bearbejdes.



Lås (X)

Undervisning, der indeholder et element som er låst, "fryses" fast i skemaet. Ved en senere optimering kan denne undervisning ikke mere flyttes .

Ignorerer (i)

Undervisning, der indeholder et element med vinge udfor 'Ignorerer (i)', bliver ignoreret i skemaet. Den bliver ikke skemalagt og heller ikke vist. Tmærværdien tælles dog med i den samlede værdi for lærere såvel som klasser.

Endvidere eksporteres elementer med vinge for 'Ignorerer (i)' generelt ikke.

Udskriv ej (N)

Print ikke - er denne vinge sat, printes for dette element hverken skema eller undervisningsoversigt.

Tidsønsker (Z)

Dette felt kan ikke ændres. Vingen kommer automatisk, såsnart der indtastes et [Tidsønske](#)for elementet.

1.4.2 Lokaler

De følgende indtastningsfelter er kun aktuelle for lokale-stamdata.

>

Lokale / Lokale

Id1

Betegnelse	Hele navnet	Reservelokale	Lokalevægt	Anneks	Pladser	Afd.	Tilsynsområde	Ekstern betegn
Id1	Idrætssal 1	Id2	4					
Id2	Idrætssal 2	Id1	4					
Fys	Fysiklokale		3					
Slø	Sløjdsal		3					
Hån	Håndarbejde		4					
Køk	Skolekøkken		4					
K1a	Klasselokale 1a	K1b	2		36			
K1b	Klasselokale 1b	K2a	2		30			
K2a	Klasselokale 2a	K2b	2		32			
K2b	Klasselokale 2b	K3a	2					
K3a	Klasselokale 3a	K1a	2					
Ps1	Pseudolokale 1 (3b)	K1a	2					
Ps2	Pseudolokale 2 (4)	K2a	2					

Alment Lokale

Id2 Reservelokale

4 Lokalevægt

Anneks

Antal pladser

Afd.

Tilsynsområde

Ekstern betegnelse

Lokale*

Reservelokale

Et reservelokale svarer funktionelt til det først ønskede lokale, og Untis kan derfor trække undervisningen til dette lokale, hvis det først ønskede lokale er optaget. En udførlig beskrivelse af regler for reservelokaler finder du i kapitlet [Lokalelogik](#).

Lokalevægt

Lokalevægten angiver, hvor vigtigt lokalet er for den aktuelle undervisnings gennemførelse.

- Lokalevægt 4: Undervisning må kun skemalægges, hvis det først ønskede lokale eller et af dets reservelokaler er ledige (f.eks. idræt).
- Lokalevægt 0: Undervisning må skemalægges, uanset om det først ønskede lokale eller et af dets reservelokaler er ledige (f.eks. for undervisning, der ikke kræver tilstedeværelse af specielle pædagogiske hjælpemidler).
- Lokalevægt 1-3: Hensigtsmæssige mellemniveauer.

Når ingen lokalevægt er angivet, svarer det til omkring lokalevægt 2.

OBS! Lokaleoptimering

Vær opmærksom på, at ud over 'Lokalevægt' har også vægtningsreglerne fra 'Lokaleoptimering' ('Skemalægning | Lokaleoptimering') stor betydning for fordelingen af lokaler. Læs nærmere herom i kapitlet [Lokalelogik](#) .

Anneks

Med anneks-lokaler forstås fag- og klasselokaler, som ikke er placeret direkte i hovedbygningen, og som derfor ikke kan nås via en normal pause. Her kan indtastes værdier fra 1 til 9 angivende anneks med tidstillæg, samt værdierne A til E angivende anneks uden tidstillæg. For nærmere information om dette læs venligst kapitlet [Annekslokaler](#) .

Antal pladser

Her kan indtastes, hvor mange elever lokalet kan rumme.

Skal du tage hensyn til 'Antal pladser' når du tildeler undervisningslokaler, bør du læse kapitlet [Lokalekapacitet](#)

.

Afd.

Afdeling: Lokaler kan også tilforordnes én bestemt afdeling. Dette er hovedsagligt af informativ betydning og muliggør afdelingsspecifikke prints af skemaer og lokalelister.

Tilsynsområde

Her kan instastes op til to [Gange](#) (gangarealer) som lokalet støder op til. Dette er kun brugbart i forbindelse med tillægsmodul Pausetilsyn

.

Hvis du vil have taget hensyn til lokalekapaciteten ved lokalefordelingen, bør du læse afsnittet "Brugertips / Lokalekapacitet".

Ekstern betegn

Ekstern betegnelse: De eksterne navne anvendes kun i forbindelse med en multi-user databank, hvor flere skoler blander ressourcer. Læs i denne forbindelse relevant kapitel i håndbogen MultiUser.

1.4.3 Klasser

I 'Stamdata | Klasser' er indtastningsfelterne ordnet efter fanerne på [Kartotekskortvisning](#) . Udvalget af faner for de forskellige stamdataelementer kan variere, afhængigt af antallet af dine anvendte tilvalgsmoduler.

- [Klasse](#)
- [Skema](#)
- [Markeringer \(under 'Skema'\)](#)
- [Klasse-ringetider](#)

1.4.3.1 Fanebladet 'Klasse'

De følgende indtastningsfelter finder du på fanebladet 'Klasse'.

Dreng / Piger

Åbn 'Stamdata | Klasser' og klik på pilen i nederste venstre hjørne af visningen for at åbne kartotekskortvisningen. I de to øverste felter på fanebladet 'Klasse' kan du indtaste de kønsspecifikke elevtal. Summen vises direkte under felterne.

Denne indtastning har kun relevans i forhold til lokalekapacitet. Skal du tage hensyn til 'Antal pladser' når du tildeler undervisningslokaler, bør du læse kapitlet [Lokalekapacitet](#).

Tidsinterval

Indtastningsfeltet 'Tidsinterval' vises kun, hvis du har tilkøbt modulet Multiuge / Perodeskema og behandles også i den dertil hørende håndbog.

Klasselærer

Der kan angives flere klasselærere pr. klasse. Dette felt anvendes i forbindelse med vægtningen af [Class teacher at least once per day](#) (klasselærer mindst én gang om dagen - se under 'Skemalægning | Prioriteringer | Klasser').

Alias (Andet navn)

Til visse formål kan det være praktisk med standardiserede betegnelser frem for skolespecifikke betegnelser. Eksempler kan være udskrift til myndighederne eller dataeksporter til fælles databank. Alias-navn kan indtastes ved det enkelte element eller samlet under 'Stamdata | Special data | Alias (2. navn)'.

OBS! Et navn for en gruppe af klasser

For klasser kan du herudover angive et navn for flere klasser via 'Stamdata | Special data | Alias (2. navn)' - f.eks. '3abc' for '3a'+ '3b'+ '3c'.

Fagfordelingskema

Indtastning her fungerer kun i sammenhæng med modulet [Fagfordeling og Tjenestetidsberegning](#) som kontrol af lærerfagfordelingen.

Navn det sidste år

Indtastning i dette felt er nødvendig i forbindelse med funktionen < Fortsætterlærer >. Skal en lærer følge klassen op på næste klassetrin, kan her indtastes sidste års navn for klassen. Denne funktion står til rådighed, hvis modulet Fagfordeling og Tjenestetidsberegning er tilkøbt.

Afd.

Afdeling: Også klasser kan éntydigt tilhøre en bestemt afdeling. Dette har hovedsagligt informativ værdi og muliggør afdelingsopdelte prints af skemaer og klasselister. Denne funktion er vigtig i forbindelse med modulet Afdelingskema .

Klassetrin

>Indtastning af klassetrin er kun nyttig i forbindelse med modulerne Fagfordeling og Tjenestetidsberegning , Elevskema ' og Kursusplanlægning .

Stamskole

Dette felt anvendes i forbindelse med import/eksport.

Ekstern betegnelse

Ekstern betegnelse: De eksterne navne anvendes kun i forbindelse med en multi-user databank, hvor flere skoler blander ressourcer. Læs i denne forbindelse relevant kapitel i håndbogen MultiUser.

1.4.3.2 Fanebladet 'Skema'

På dette faneblad kan du indtaste såvel parametre som [Markeringer](#) .

Stamlokale (betegnelse)

Her kan indtastes klassens klasselokale. Det forenkler senere [Indtastning af undervisning](#) . Har visse klasser ikke noget klasselokale, så læs herom i 'Brugertips' - kapitel [Reservelokaler](#) .

Klassegruppe

Dette felt anvendes på skoler og læreranstalter, hvor elever kan vælge hoved-/bifag eller mellem flere ligeværdige fag.

Pas på!

Det er IKKE tilrådeligt at udfylde felter, hvis betydning du ikke er helt klar over. En præcis forklaring på klassegrupper finder du i afsnittet [Brugertips / Klassegrupper](#) .

Frokostpause min,maks.

Her indtaster du for den enkelte klasse, hvor lang frokostpausen mindst (min) og maksimalt (maks) må være.

Skal frokostpausen være én time, indtaster du '1-1'. Overlader du til gp-Untis at lægge ingen, én eller to timers frokostpause, indtaster du '0-2'.

Lektioner pr. dag min,maks.

Her indtastes det minimale (min) og maksimale (maks) antal lektioner pr. dag for den viste klasse.

Skal klassen have mindst 4 og højst 6 lektioner om dagen, indtaster du '4-6'.

Max. hovedfag pr. dag

Du kan for ethvert fag vælge, om det skal være et hovedfag. Via dette felt fastlægger du herefter, hvor mange hovedfagstimer klassen må have pr. dag.

Max. antal H-fag i rækkefølge

Via dette felt fastlægger du, hvor mange hovedfagstimer der maksimalt må ligge umiddelbart efter hinanden.

Max. different less./day

Maksimalt antal forskellige fag pr. dag: Det kan forekomme, at der er regler for, hvor mange forskellige fag der maksimalt må undervises i pr. dag.

Denne maksimalværdi kan du fastlægge klassevis via dette felt

Basisklasse (til udskrift)

Hvis du ønsker en samlet udskrift for en gruppe af klasser, indtaster du i dette felt den overordnede klasse/gruppe-betegnelse. Læs mere herom i [Brugertips](#).

1.4.3.3 Markeringer**(P) Mellemtimer tilladt**

Som regel gælder det om helt at undgå mellemtimer. Dog kan det accepteres i forbindelse med pseudoklasser eller delehold.

(F) Undervis. hver anden dag

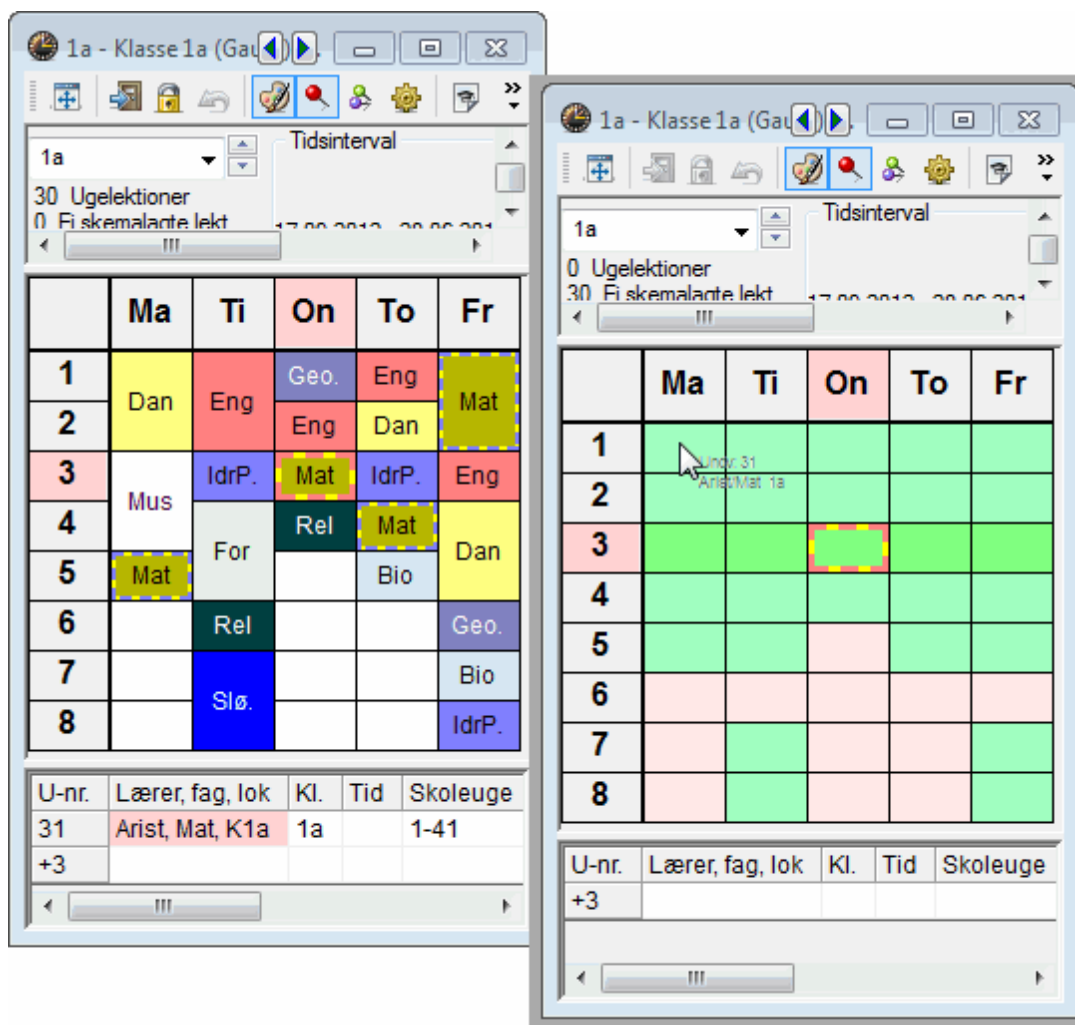
I deltidsklasser, som ikke skal have undervisning hver ugedag, er det ofte IKKE ønskværdigt, at undervisningen lægges på hinanden følgende ugedage. Vælg i sådanne tilfælde denne markering.

(H) Halvdagsskema

Kun skemalægning det halve af en dag. Vælger du denne markering, må Untis ikke skemalægge formiddag og eftermiddag på samme ugedag.

(Y) Behold start- og sluttid

Med denne markering sikrer du, at klassen får spærret for skemalægning af timer før den første og efter den sidste allerede skemalagte undervisning (i forb. med flere på hinanden følgende optimeringer).



Ovenfor ses et tilladt klasse-tids-skema for en efterfølgende optimering med markering 'Y'.

Ved en efterfølgende optimering, kan allerede ibrugtagne timeplaceringer og mellemtimeplaceringer genbruges. Typisk anvendes denne markering, når du ved en efterfølgende optimering vil bibeholde de undervisningsfrie skemapositioner for lærere såvel som for elever. Aktiviteter som ligger uden for skoletiden bliver hermed heller ikke påvirket.

OBS!

Denne markering lægger strenge grænser for en efterfølgende optimering, og bør derfor anvendes med varsomhed.

1.4.3.4 Klasse-ringetider



Funktionsknappen 'Klasse-ringetider' finder du under 'Stamdata | Klasser' (og ikke ved andre elementer).

Denne funktion bruges til at opdele skoledagen individuelt for klasserne i dobbelt-og enkelttimeintervaller. Du kan også, hvis du i din planlægning skal tage hensyn til bus/tog-tider, forhindre at undervisningen

slutter efter bestemte lektioner på dagen.

I 'Klasse-ringetider' kan du:

- Reservere skemapositioner til dobbeltlektioner
- Reservere skemapositioner til enkeltlektioner
- Undgå at undervisningen stopper efter visse lektioner

1. Hvis du for eksempel helst vil have dobbeltlektioner i de første to timer af dagen (alle fem dage om ugen), skal du markere det ønskede interval og i området 'Skemalægning' klikke på knappen 'Dobbeltlektion'.

2. Hvis du på et givet tidspunkt af dagen ønsker enkeltlektioner, anvender du naturligvis knappen 'Enkelttimer'.

OBS! Tilstækkeligt antal dobbeltlektioner

Vær opmærksom på, at skal disse indstillinger kunne virke, må der for den enkelte klasse i feltet 'Dobbeltlek.' (se i visningen 'Undervisning | Klasser') være muliggjort et passende min/maks for dobbeltlektioner.

3. Endelig kan du via knappen 'Nej' i området 'Sidste lektion' markere de lektioner, efter hvilke undervisningen i denne klasse ikke må slutte. Dette kan være af hensyn til bus/tog-tider som tidligere nævnt.

OBS! Kopier

4. Via knappen 'Kopier (Ctrl C)' kan du overføre de valgte indstillinger til andre klasser.

Klasse-ringetider / Klasse-75

1a Klasse 1a (Gauss)

Skemalægning Vikariat

Sidste lektion **3**

Nej

Ja

Skemalægning **1**

Dobbeltektion **1**

Enkelttimer **2**

Ligegyldigt

Kopier (Ctrl C) **4**

* = ingen dobbeltektion henover efterfølgende pause

	1	2	3	4	5	6	7	8
	8:00	8:55	9:50	10:45	11:40	12:35	13:30	14:25
	8:45	9:40	10:35	11:30	12:25	13:20	14:15	15:10
Mandag	2	*2	1	2	2			
Tirsdag	2	*2	1	2	2	X		
Onsdag	2	*2	1	2	2			
Torsdag	2	*2	1	2	2			
Fredag	2	*2	1	2	2	X		

1 **2** **3**

OK Afbryd Anvend Hjælp

Det nedenstående skema viser de ovenstående indstillinger:

1a - Klasse 1a (Gauss) Skema (Kla1)

1a

30 Ugelektioner
0 Ej skemalagte lekt.

Klasse(r)

Tidsinterval 17-09-2012 - 28-06-2013

Skemasamm aktiv Kun ændr

Ej ske 0/30	Ma	Ti	On	To	Fr
1		Rel			
2	Dan	Dan	Dan	Eng	Mat
3	Geo.	IdrP.		IdrP.	Rel
4	Mus		Eng	Mat	Eng
5	Mat	For	Mat	Bio	
6		Mus			Geo.
7					Bio
8		Slø.			IdrP.

U-nr.	Lærer, fag, lok	Kl.	Tid	Skoleuge	Elev	Særlig
73	Arist, IdrP, Id2	1a, 1b		2-41		Piger
+3	Rub, IdrD, Id1	1a, 1b				

1.4.4 Lærere

På fanebladet 'Lærer' (via 'Stamdata | Lærere' - åbn kartotekskortvisningen og klik på fanebladet 'Lærer') kan følgende indtastes:

Titel

Dette felt har kun informativ karakter (hr., fru osv.). Påvirker kun print og eksport.

Fornavn

Her indtastes lærerens fornavn. Untis anvender dette ved forskellige prints.

Lønnummer

>Indtastning her er kun nødvendig, hvis det skal med på prints eller på eksport til f.eks. myndigheder.

Status

Her indtastes stillingsbetegnelser (skoleleder, bibliotekar osv.)

Afdeling(er)

Hver lærer kan tilfældigvis have flere afdelinger. Dette kan bruges i forbindelse med 'Afdelingsskema'-modul. Skemaer kan også printes afdelingsvis.

e-mail adresse

Læreres e-mail adresser.

>Disse e-mail adresser kommer kun i anvendelse i forbindelse med modulerne 'Inforskema' og 'Vikarhåndtering'. I disse moduler kan lærerne få tilsendt skemaændringer og vikaroplysninger pr. e-mail.

Telefonnummer

Dette felt har kun administrativt formål og anvendes som sådan ikke af programmet.

Mobiltelefon

Indtastningsfelt for mobilnummer.

Her er en indtastning brugbar i forbindelse med modulet 'Inforskema'. I dette modul kan læreren tilsendes beskeder på sms.

Alias (Andet navn)

Som for klasser: Til visse formål kan det være praktisk med standardiserede betegnelser frem for skolespecifikke betegnelser. Eksempler kan være udskrift til kommunen eller dataeksporter til fælles databank. Alias kan tilskrives ved den enkelte lærer eller via 'Stamdata | Special data | Alias (2. navn)'.

Fødselsdato

Dette felt har kun informativ karakter. Påvirker kun print og eksport.

Stamskole

Dette felt har kun informativ karakter. Påvirker kun print og eksport.

Startdato & Slutdato

Ansættelses- og fratrædelsesdato kan angives her.

Arbejdsnorm

Den enkelte lærers arbejdsnorm indtastes her.

Persnr. 2

>I enkelte tilfælde har en lærer to forskellige lønnumre. Her kan det andet indtastes.

Ekstern betegnelse

Ekstern betegnelse: De eksterne navne anvendes kun i forbindelse med en multi-user databank, hvor flere skoler blander ressourcer. Læs i denne forbindelse relevant kapitel i håndbogen [MultiUser](#) .

Mand / Kvinde

Udover den informative karakter anvendes dette felt i forbindelse med modulet [Pausetilsyn](#) . Her kan så fastlægges, at visse tilsyn kun bør gives til kvinder respektivt mænd.

Text 2

Til interne bemærkninger.

1.4.4.1 Fanebladet 'Lærer'

På fanebladet 'Lærer' (via 'Stamdata | Lærere' - åbn kartotekskortvisningen og klik på fanebladet 'Lærer') kan følgende indtastes:

Alment	Lærer	Skema	Værdier	Læ. kompt.	Værdikorrektur	Vik.	Pausetilsyn
Dr.	Titel		Alias (Andet navn)	<input type="checkbox"/>	Mand		
Carl Friedrich	Fornavn		Fødselsdato	<input type="checkbox"/>	Kvinde		
	Lønnummer		Stamskole				
	Status		Startdato				
A1	Afdeling(er)		Slutdato				
gauss@teachere	e-mail adresse		Arbejdsnom		Text 2		
	Telefonnummer		Persnr. 2				
	Mobiltelefon		Ekstem betegnelse				

Titel

Dette felt har kun informativ karakter (hr., fru osv.). Påvirker kun print og eksport.

Fornavn

Her indtastes lærerens fornavn. Untis anvender dette ved forskellige prints.

Lønnummer

>Indtastning her er kun nødvendig, hvis det skal med på prints eller på eksport til f.eks. myndigheder.

Status

Her indtastes stillingsbetegnelser (skoleleder, bibliotekar osv.)

Afdeling(er)

Hver lærer kan tilforordnes flere afdelinger. Dette kan bruges i forbindelse med 'Afdelingsskema'-modulet. Skemaer kan også printes afdelingsvis.

e-mail adresse

Lærernes e-mail adresser.

>Disse e-mail adresser kommer kun i anvendelse i forbindelse med modulene 'Infoskema' og 'Vikarhåndtering'. I disse moduler kan lærerne få tilsendt skemaændringer og vikaroplysninger pr. e-mail.

Telefonnummer

Dette felt har kun administrativt formål og anvendes som sådan ikke af programmet.

Mobiltelefon

Indtastningsfelt for mobilnummer.

Her er en indtastning brugbar i forbindelse med modulet 'Infoskema'. I dette modul kan læreren tilsendes beskeder på sms.

Alias (Andet navn)

Som for klasser: Til visse formål kan det være praktisk med standardiserede betegnelser frem for skolespecifikke betegnelser. Eksempler kan være udskrift til kommunen eller dataeksporter til fælles databank. Alias kan tilskrives ved den enkelte lærer eller via 'Stamdata | Special data | Alias (2. navn)'.

Fødselsdato

Dette felt har kun informativ karakter. Påvirker kun print og eksport.

Stamskole

Dette felt har kun informativ karakter. Påvirker kun print og eksport.

Startdato & Slutdato

Ansættelses- og fratrædelsesdato kan angives her.

Arbejdsnorm

Den enkelte lærers arbejdsnorm indtastes her.

Persnr. 2

>I enkelte tilfælde har en lærer to forskellige lønnumre. Her kan det andet indtastes.

Ekstern betegnelse

Ekstern betegnelse: De eksterne navne anvendes kun i forbindelse med en multi-user databank, hvor flere skoler blander ressourcer. Læs i denne forbindelse relevant kapitel i håndbogen MultiUser .

Mand / Kvinde

Udover den informative karakter anvendes dette felt i forbindelse med modulet Pausetilsyn . Her kan så fastlægges, at visse tilsyn kun bør gives til kvinder respektivt mænd.

Text 2

Til interne bemærkninger.

1.4.4.2 Fanebladet 'Skema'

På fanebladet 'Skema' (via 'Stamdata | Lærere' - åbn kartotekskortvisningen og klik på fanebladet 'Skema') kan følgende indtastes:

Stamlokale (betegnelse)

Her kan for hver lærer indtastes et stamlokale. Det vil gøre den senere indtastning af undervisning lettere.

Frokostpause min,maks.

Her indtaster du for hver lærer, hvor lang frokostpausen mindst (min) og maksimalt (maks) må være.

Lektioner pr. dag min,maks.

Med denne indtastning fastlægges det minimale (min) og maksimale (maks) antal undervisningslektioner pr. dag for den valgte lærer. Indtast '2-5' for en lærer, der skal undervise mindst 2 og maksimalt 5 lektioner pr. dag. Efterlades feltet tomt, er det op til Untis, hvor mange timer læreren kommer til at undervise pr. dag.

Mellemtimer min,maks.

Via dette felt fastlægges en lærers min-maks. mellemtimetotal pr. uge. Efterlades feltet tomt, opfattes dette af Untis som indtastning '0-0' (altså ingen mellemtimer).

Maks. antal lekt. i rækkefølge

Her angives for den enkelte lærer, hvor mange undervisningstimer der må skemalægges i rækkefølge, før der ønskes en mellemtime.

Fri i yderlekt.

På skoler hvor undervisningen strækker sig hen på aftenen, er det ofte ønskværdigt, at der for en lærer afsættes en nærmere bestemt "pause" (angives ofte i "antal undervisningslektioner") mellem sidste aftenlektion og første morgenlektion. Denne værdi kan indtastes her.

Arbejder en skole med f.eks. maks. 11 lektioner dagligt, og en lærer har haft undervisning til og med 9. lekt. om aftenen, betyder en indtastning på '4', at læreren først kan have undervisning fra 3.lekt. dagen derpå.

Lærer-optimerings-kendetegn

Denne indtastning er vigtig i forbindelse med optimering med variabel lærertildeling (lærerbytte).

Tilladte indtastninger er enten tallene 1 til 9 eller bogstaverne A til Z.

Indtastes et tal, betyder det, at der ved optimeringen kun må byttes med en lærer, som har samme optimerings-kendetegn (tal).

Indtastes derimod et bogstav, betyder det, at der ved optimeringen kun må byttes med en lærer, som har et andet - eller ingen optimerings-kendetegn (bogstav).

1.4.4.3 Markeringer

(H) Halvdagsskema

Kun lægge et skema for den halve dag: Når der markeres her, må både formiddag og eftermiddag ikke skemalægges for samme dag.

(Y) Behold start - og sluttid

Når der vinges af her, spærres der for en efterfølgende optimerings-planlægning af undervisning før og efter den allerede skemalagte halvdagsundervisning for den pågældende lærer. Der må altså ikke planlægges timer ud over de allerede fastlagte start- og sluttider for den pågældende lærer. Et eksempel ses under '[Stamdata | Klasser](#)' - fanebladet 'Skema'.

(R) Not in 1st AND last period of 1 d

Med denne markering kan du undgå, at en lærer får lagt undervisning BÅDE i første OG i sidste lektion på samme dag. (se også 'Skemalægning | Prioriteringer' - fanebladet Tidsønsker og endelig markøren 'Tidsønsker for lærere'.

Meget vigtigt

I indtastningsrummet 'Meget vigtigt' kan du indtaste specielle hensyn for den enkelte lærer.

Ikke mellemtimer (A)

Med denne markering vil optimeringen lægge stor vægt på at undgå mellemtimer for den pågældende lærer.

Frokost (B)

Med en markering her, vil optimeringen lægge stor vægt på at indlægge en frokostpause.

Maks lekt./dag (C)

Med en markering her, vil optimeringen lægge stor vægt på angivelserne under 'Lektioner pr. dag min, maks.'.

Maks lekt. i følge (D)

Med en markering her, vil optimeringen lægge stor vægt på angivelserne under 'Maks. antal lekt. i rækkefølge'.

OBS! Ikke for alle lærere

Brug disse markeringer med omtanke. Vil du for alle lærere have lagt stor vægt på få mellemtimer, kan dette reguleres via optimeringen.

1.4.5 Fag

1.4.5.1 Fanebladet 'Fag'

Faggruppe

Når du indtaster kvalifikationer for den enkelte lærer, kan du enten indtaste enkelte fag eller samlede faggrupper. Dette felt er derfor kun relevant i forbindelse med brugen af modulet Fagfordeling og tjenestetidsberegning .

Alias (Andet navn)

I nogle forbindelser (f.eks. dataexport) kan det være hensigtsmæssigt at anvende standardiserede fremfor skolerelaterede betegnelser. Sådanne alias-navne kan indtastes her eller via 'Stamdata | Special data | Alias (2.navn)'.

1.4.5.2 Fanebladet 'Skema'

(H) Hovedfag

Her markeres, om et fag skal betragtes som hovedfag. Se yderligere i kapitlet 'Brugertips - Hovedfag'.

(R) Yderlektion

Med en markering her kan et fag karakteriseres som ydertimefag. Dette bevirker, at faget fortrinsvis

placeres i starten eller afslutningen af en skoledag. Se yderligere i kapitlet 'Brugertips' om valgfag og yderlektioner.

(F) Valgfag

Med en markering her kan et fag karakteriseres som valgfag. Dette bevirker, at faget fortrinsvis placeres i starten eller afslutningen af en skoledag. Se yderligere i kapitlet 'Brugertips' om valgfag og yderlektioner.

(2) Også flere gange pr. dag

Denne markering bør kun anvendes i særtilfælde, da den medfører, at optimeringen skemalægger faget helt tilfældigt - f.eks. også flere gange dagligt. Hermed sættes prioriteringerne for 'Faget maks. en gang pr. dag' og 'Undgå dobbelttimefejl' ud af kraft.

(G) Ej som yderlektion

En markering her bevirker, at faget skemalægges "midt" på skoledagen og ikke i yderlektioner.

(D) Dobbeltlektion

OBS!

Denne markering bør kun anvendes i særtilfælde. Læs først kapitlet 'Undervisning'.

Denne markering medfører, at den automatiske optimering altid vil planlægge det tilladte (eller ønskede) antal dobbeltlektioner. Du kan således også forhindre opsplitning af dobbeltlektioner eller modsat gennemtvunge planlægning i enkeltlektioner:

- Vær opmærksom på, at skal dobbelttimer behandles korrekt, SKAL der endvidere foretages en markering i feltet 'Dobbeltlektioner min-maks' ('Undervisning | Fag' - fanebladet 'Skema' i Kartotekskortvisningen).
- Denne markering er kun virkningsfuld, når den anvendes sparsomt, da den besværliggør optimeringen for fag med mange dobbeltlektioner. Brug derfor kun denne markering, hvis en forudgående optimering ikke har givet det ønskede resultat, og du allerede har sat prioriteringen til '5' for 'Undgå dobbelttimefejl (eller fejl i blokke)' under 'Skemalægning | Prioriteringer' - fanebladet 'Timefordeling'.

(E) Dobbeltlektion over *-pause

Pauser, som i 'Indstillinger | Ringetider' - faneblad 'Pauser' er markeret med en '*', har indflydelse på fordelingen af dobbeltlektioner, da disse ikke kan ligge hen over sådanne pauser. Er dette ikke hensigtsmæssigt for et bestemt fag, kan du omgå dette med denne markering.

1.4.5.3 Fanebladet 'Fag' - Markeringer

PÅ fanebladet 'Skema' kan følgende indtastes:

Faglokale (betegnelse)

Har et fag sit eget faglokale, kan navnet på dette angives her. Dette vil forenkle den senere indtastning af undervisning. Læs yderligere kapitlet [Lokalelogik](#) i [Brugertips](#).

Eftermiddagslekt. (min,maks.)

I dette felt kan angives hvor mange eftermiddagslektioner der mindst SKAL være - og højst MÅ være for det aktuelle fag.

Ugelektioner (min,maks.)

Her kan angives det minimale og maksimale antal ugelektioner for det aktuelle fag. Dette har kun betydning i forbindelse med anvendelsen af modulet 'Fagfordeling og tjenestetidsberegning'.

Fagrækkefølge for lærere

Ved at indtaste cifre mellem 1 og 9 udvirker du, at fag med samme ciffer skemalægges i lærerskemaet efterfølgende hinanden. Ved at indtaste bogstaver mellem A og F udvirker du det modsatte. Læs kapitlet [Fagrækkefølge](#) i afsnittet [Brugertips](#).

Fagrækkefølge for klasser

Ved at indtaste cifre mellem 1 og 9 udvirker du, at fag med samme ciffer skemalægges efterfølgende hinanden i klasseskemaet. Ved at indtaste bogstaver mellem A og F udvirker du det modsatte. Læs kapitlet [Fagrækkefølge](#) i afsnittet [Brugertips](#).

1.4.6 Elever

Modulet 'Elevskema' indeholder det ekstra stamdataelement 'Elever'. Hvis dette modul ikke er installeret, er menupunktet inaktivt.

OBS!

På nogle klassesetrin og i visse skolesystemer ligger elevalg (kursusvalg) til grund for holddelingen. Dette

medfører, at hver elev har sit eget skema. Untis tilbyder to moduler til denne planlægning: ' **Elevskema** ' og ' **Kursusplanlægning** '. Brugen af 'Elevskema' er tilrådelig, når op til 25% af undervisningen er valgbar. Brugen af 'Kursusplanlægning' er tilrådelig, når eleverne kan vælge (næsten) al deres undervisning frit.

1.4.7 Afdelinger

Via menupunktet 'Stamdata | Special data' finder du følgende stamdata:

Student groups

Elevgrupper: Disse er nyttige i forbindelse med Brugergrupper i WebUntis . For skemalægningen har de ingen relevans.

Alias (2. navn)

I nogle sammenhænge kan det være nødvendigt at anvende andre navne end dem som er angivet under 'Stamdata'. F.eks.:

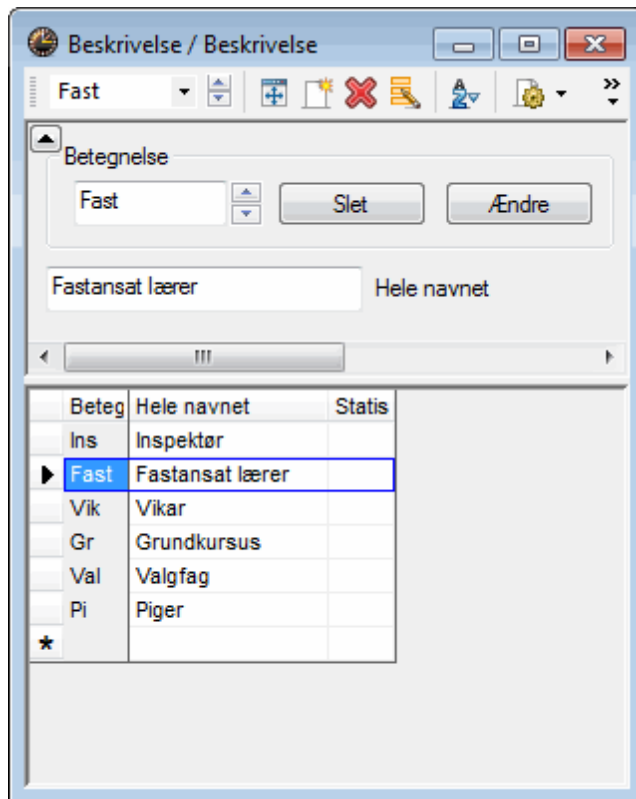
- Standardiserede fagnavne i forbindelse med print til kommunen
- Standardiserede fagnavne i forbindelse med opkobling til databanker
- Skemaprint

Hvis du vil anvende de her indtastede alias-navne i forbindelse med print af skemaet, skal du først sætte en markering i feltet 'til skema' og dernæst sætte en tilsvarende markering i Skema-visningen ('Vis udskrift | Detaljer | Anvend alias'). Læs mere i kapitlet Alias i afsnit Skema .

Beskrivelse

Beskrivelserne er specielle stamdata med betegnelser såvel som hele navne. De er nyttige, hvis samme betegnelse bruges for flere elementer. I print og visninger kan du via 'Feltvalg' vælge, om kun betegnelsen eller hele navnet skal printes/vises.

Du kan f.eks. i 'Hele navnet' for en beskrivelse indtaste en lidt længere tekst. For de øvrige stamdata er det tilstrækkeligt at indtaste betegnelsen for beskrivelsen, for at du ved print og visninger henholdsvis har 'Betegnelse' og 'Hele navnet' til rådighed.



Afdelinger

Du kan knytte ethvert stamdataelement til en afdeling (for lærernes vedkommende op til flere). Vidtrækkende følger har dette kun ved brugen af modulet Afdelingskema . Bruges dette modul ikke, er indtastningen af afdeling stort set kun informativ og kan f.eks. printes sammen med skemaet, eller der kan udprintes skemaer afdelingsvis.

Tilsynsområde

For 'Pausetilsyn' er det nødvendigt at indtaste 'Tilsynsområde / Gård'. Husk at der kræves en licens for anvendelse af modulet Pausetilsyn.

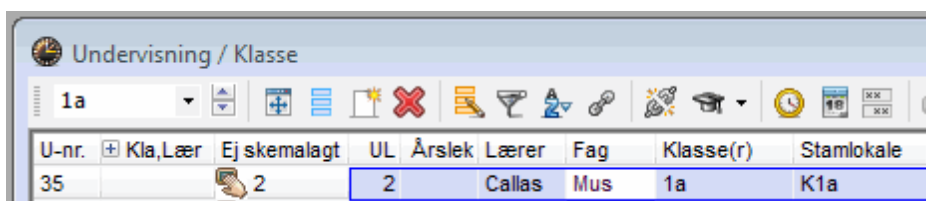
2 Undervisning

2.1 Undervisning

En undervisning (lektion) er en kombination af elementerne [klasse](#) , [lærer](#) , [fag](#) og [lokale](#) med et defineret timetal og evt. andre parametre. Vi skelner mellem **planlagte** og **skemalagte** lektioner.

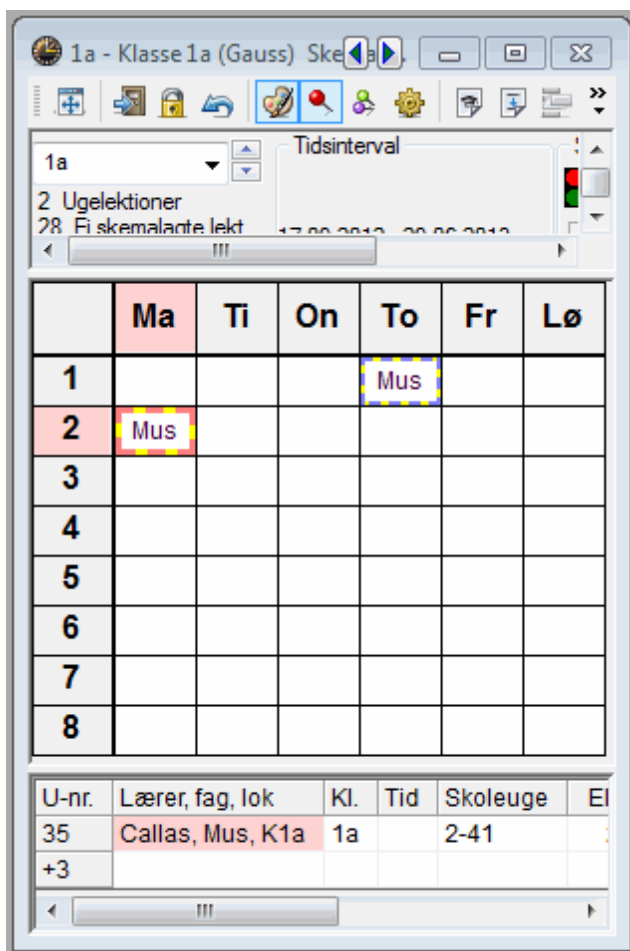
En **planlagt** lektion kunne være: Callas skal undervise to timer i musik i klasse 1a i lokale K1a. Den **skemalagte** lektion har yderligere fået sin placering i skemaet - f.eks. ma.-2.lekt. og to.-1.lekt.

Planlagt lektion



U-nr.	Kla, Lær	Ej skemalagt	UL	Årslek	Lærer	Fag	Klasse(r)	Stamlokale
35	2		2		Callas	Mus	1a	K1a

Skemalagt lektion



	Ma	Ti	On	To	Fr	Lø
1				Mus		
2	Mus					
3						
4						
5						
6						
7						
8						

U-nr.	Lærer, fag, lok	Kl.	Tid	Skoleuge	El
35	Callas, Mus, K1a	1a	2-41		
+3					

2.2 Undervisningsvinduet

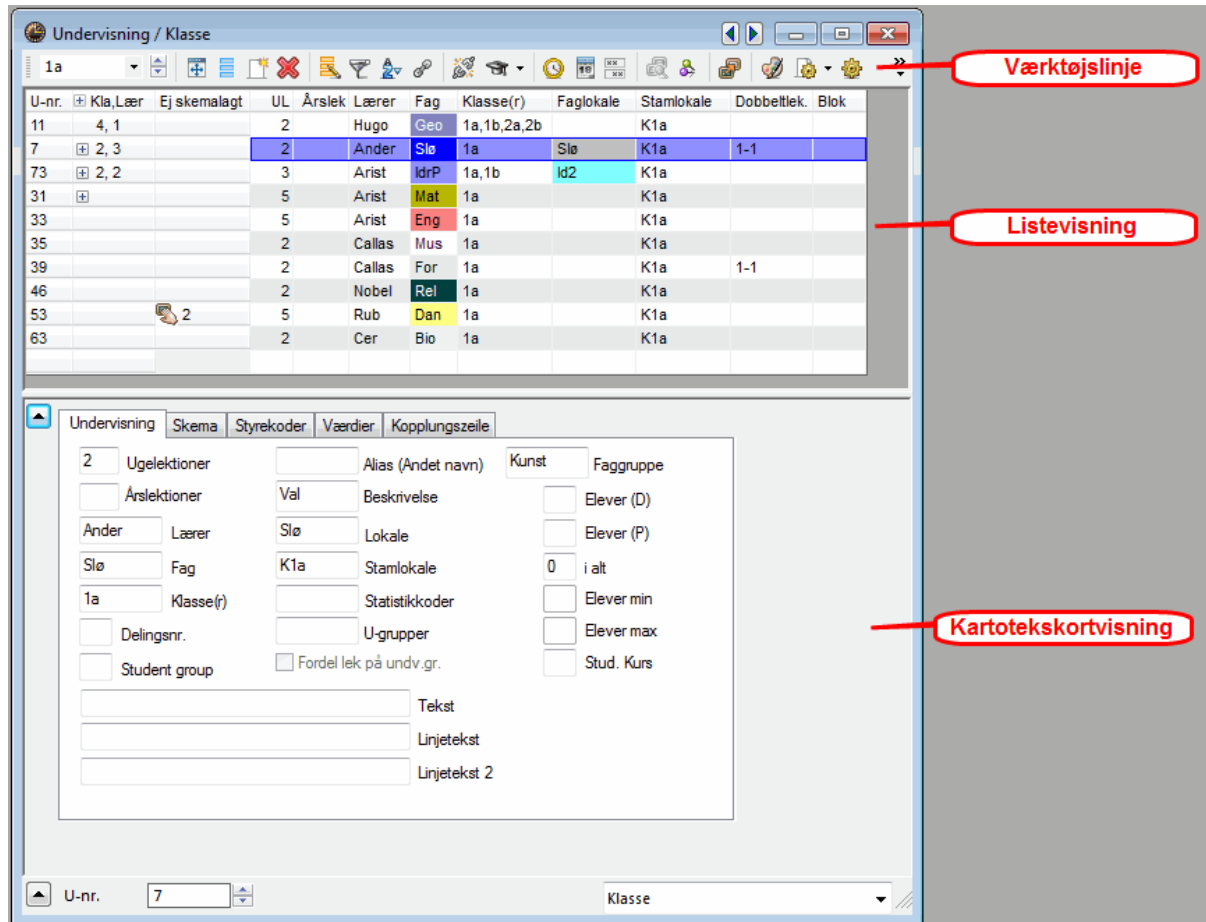
Undervisningsvinduet har, såvel som [Stamdatavinduet](#), principielt tre dele: [Værktøjslinje](#), Listevisning og Kartotekskortvisning.

Kartotekskort- og listevisning fungerer som i [Stamdatavinduet](#). I Kartotekskortvisning vises en lektion med alle tilhørende informationer. I Listevisning ses alle lektioner i en tabel. Hver lektion får automatisk tildelt et internt Undervisningsnummer for identifikation i programmet. Dette nummer har du ingen indflydelse på.

OBS: Visninger

Undervisningsvinduet er en visning. Hermed er de i kapitlet [Stamdataformater](#) givne informationer om brug af visninger ([Tilpasse visninger](#) og [Administrere visninger](#)) også gældende for Undervisningsvinduet.

Via menupunkterne "Undervisning | Klasser" og "Undervisning | Lærere" kan du åbne standardvisninger som er sorteret efter hhv. klasser og lærere.



The screenshot shows the 'Undervisning / Klasse' window. At the top is a toolbar labeled 'Værktøjslinje'. Below it is a table of teaching assignments, with the row for 'U-nr. 7' selected, labeled as 'Listevisning'. The table has columns: U-nr., Kla., Lær, Ejskemalagt, UL, Årslek, Lærer, Fag, Klasse(r), Faglokale, Stamlokale, Dobbeltlek, and Blok. Below the table is a form labeled 'Kartotekskortvisning' with various input fields and checkboxes for details like 'Ugelektioner', 'Årslektioner', 'Lærer', 'Fag', 'Klasse(f)', 'Lokale', 'Stamlokale', 'Statistikcoder', 'U-grupper', 'Fordel lek på undv.gr.', 'Kunst', 'Faggruppe', 'Elever (D)', 'Elever (P)', 'Elever min', 'Elever max', and 'Stud. Kurs'. At the bottom, there are dropdown menus for 'U-nr.' (set to 7) and 'Klasse'.

Pas på: Koblinger

Ved [Koblinger](#) (samtidig undervisning) finder du i kolonnen 'Kl,Lær' et '+'. Når du klikker på dette, vises alle linierne i koblingen

2.3 Indtastning af undervisning

Undervisning kan indtastes i [Kartotekskortvisning](#) eller i [Listevisning](#) . Da der findes forskellige former for undervisning, beskrives dette separat.

En kobling er undervisning hvori der indgår flere elementer af én slags, som skal foregå i samme tidsrum. Ved en klassekobling undervises flere klasser eller delklasser af samme lærer. Ved en lærerkobling underviser flere lærere samme klasse eller flere klasser samtidigt.

- [Simpel undervisning](#)
- [Dobbelttime - blok](#)
- [Kobling](#)

OBS: Kolonnen 'Kla,Lær'

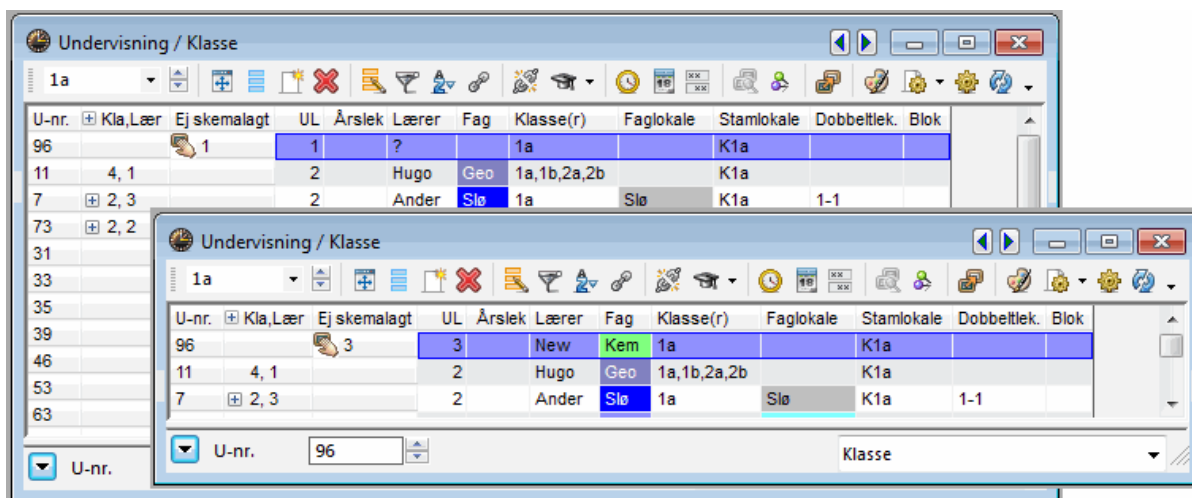
En indtastning i kolonnen *Kla,Lær* angiver, hvor mange klasser og hvor mange lærere der indgår i den givne undervisning. For en simpel undervisning med én klasse og én lærer vises intet i denne kolonne.

U-nr.	Kla,Lær	Ej skemalagt	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltek.	Blok
7	2, 3		2		Ander	Slø	1a	Slø	K1a	1-1	
73	2, 2		3		Arist	ldrP	1a,1b	ld2	K1a		
31			5		Arist	Mat	1a		K1a		
33			5		Arist	Eng	1a		K1a		
35			2		Callas	Mus	1a		K1a		

2.3.1 Indtastning af en simpel undervisning

Åbn et undervisningsvindue ('Undervisning | Klasser') og klik på knappen <Ny>. Herved dannes en ny undervisning med én ugentlig time. Alternativt kan du også danne en ny undervisning i den nederste linie i Listevisningen.

Indtast nu alle relevante oplysninger for denne undervisning (klasse, lærer, fag, lokale) og foretag evt. også ændring i antallet af ugelektioner.

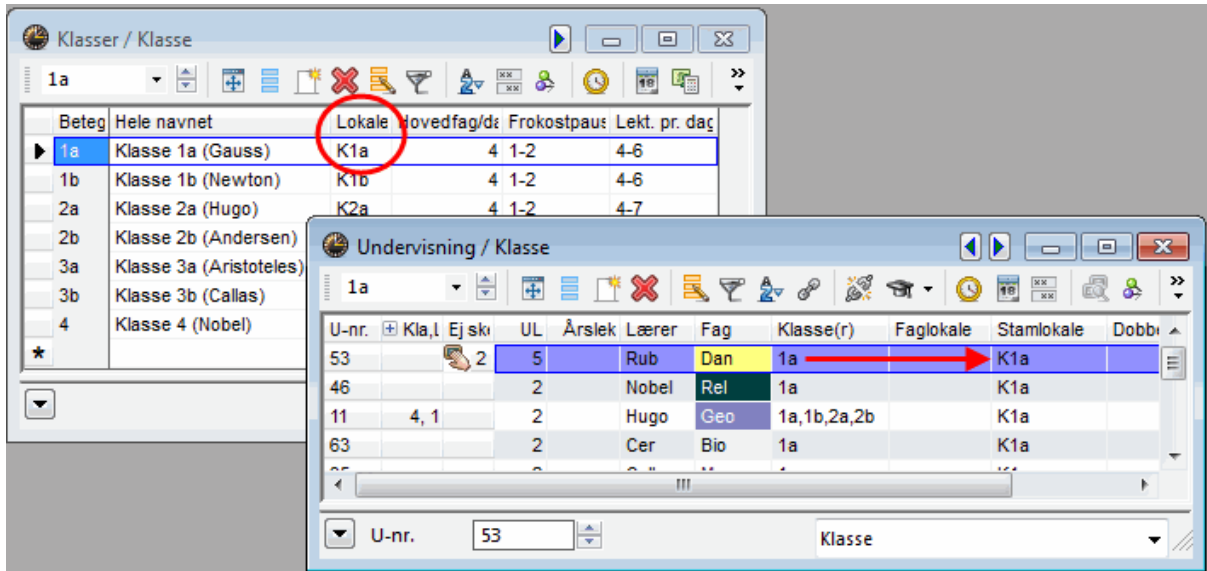


Klasser / Lærere

Afhængig af om du arbejder i 'Undervisning | Klasser' eller 'Undervisning | Lærere', fremgår den aktuelle klasse eller den aktuelle lærer automatisk.

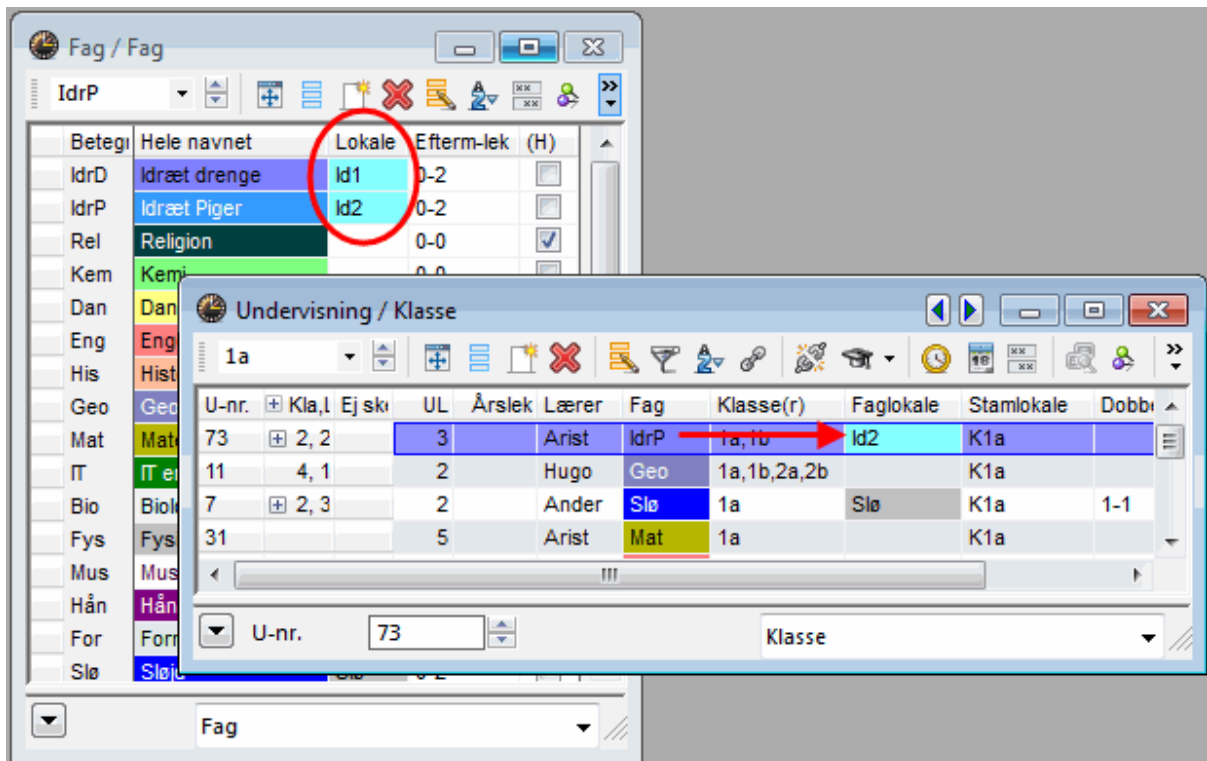
Stamlokale(klasselokale)

Når du via 'Stamdata | Klasser' har tildelt hver enkelt klasse et lokale, bliver dette lokale automatisk vist i kolonnen [Stamlokale](#) i visninger under menupunktet 'Undervisning'. Også for en lærer kan der anføres et stamlokale. Dette vil fungere på samme måde som ovenfor.



Fachraum

Du kan også tildele lokaler via 'Stamdata | Fag' - altså faglokaler - som f.eks. en idrætssal til faget *Idræt*. Når der indtastes et fag med tilhørende [Faglokale](#) vises dette automatisk i kolonnen *Faglokale*



OBS: Faglokale + Stamlokale

For en given undervisning kan der indtastes såvel faglokale som stamlokale. I dette tilfælde vil 'Optimering' først forsøge at lægge undervisningen i faglokalet. Skulle dette ikke være muligt, kan undervisningen også skemalægges i stamlokalet. Yderligere information finder du i kapitlet [Lokalelogik](#).

2.3.2 Dobbeltlektioner - Blok**Dobbeltlektion**

Enhver undervisning lægges som enkeltlektion, medmindre andet direkte er ønsket. Ønskes dobbeltlektioner (eller kan dette tillades), skal det for den enkelte undervisning angives i kolonnen *Dobbeltlek*. I denne kolonne angives det tilladte interval for dobbeltlektioner:

Indtastning '1-1' betyder, at intervallet går fra 1 til 1. Undervisningen skal altså skemalægges i netop én dobbeltlektion.

U-nr.	Kla,Lær	Ej sken	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek.	Blok
7	2, 3		2		Ander	Slø	1a	Slø	K1a	1-1	

Indtastning '0-1' betyder, at intervallet går fra 0 til 1. To-timers undervisningen KAN altså skemalægges i én dobbeltlektion - men behøver det ikke nødvendigvis.

U-nr.	Kla,Lær	Ej sken	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek.	Blok
3	1, 2		2		Gauss	IT	3a		K3a	0-1	

Indtastning '1-2' betyder, at intervallet går fra 1 til 2. Fire-timers undervisningen KAN altså skemalægges i op til 2 dobbeltlektioner. 'Optimering' skal (i samspil med 'Prioriteringer') beslutte, hvilken løsning der passer bedst rent skemateknisk.

U-nr.	Kla,Lær	Ej sken	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek.	Blok
76	2, 2	4	4		Arist	IdrP	3a,3b	Id2	K3a	1-2	

Tips: Dobbeltlektion-betingelse

Når der for en given undervisning er forskellige muligheder for dobbeltlektioner (f.eks. '0-1' eller '1-2'), anbefales det, at du IKKE låser dig fast til netop én løsning (via 'Prioriteringer'). Dette fører oftest til et væsentligt bedre skema.

Blok

SKAL en fler-timers undervisning læses i fortløbende lektioner, drejer det sig om en 'Blok'.

Indtast i kolonnen 'Blok' f.eks. '3' for en tre-timers blok.

U-nr.	Kla,Lær	Ej sken	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek	Blok
2		3	3		Callas	For	1b		K1b		3

SKAL en seks-timers undervisning læses i to tre-timers blokke, skal du indtaste '3,3'.

U-nr.	Kla,Lær	Ej sken	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek	Blok
54		6	6		Rub	Dan	1b		K1b		3,3

2.3.3 Koblinger

For Untis er en undervisning koblet, når mere end én lærer og/eller mere end én klasse indgår i den samme undervisning på det samme tidspunkt.

OBS: Indtastningsregler for koblinger

Klasser skal ved indtastning skilles med komma. Lærere skal skrives i hver sin Koblingslinje.

Koblet undervisning (flere klasser)

Rubens skal undervise klasserne 1a og 1b to timer ugentlig i faget 'Husgerning' i lokale 'Skolekøkken':

UL	Lærer	Fag	Klasse(r)	Lokale
2	Rub	Hus	1a,1b	Køk

Fremgangsmåde som for simpel undervisning. Dog indtastes i kolonnen 'Klasse(r)' 1a og 1b adskilt med komma. Lokalet sættes ikke automatisk ind, da faget 'Husgerning' ikke har noget fast lokale tildelt. Indtast derfor lokalet i kolonnen 'Faglokale'.

U-nr.	Kla,Lær	Ej skemalagt	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek	Blok
96	2, 1	2	2		Rub	Hus	1a,1b	Køk	K1a		
31			5		Arist	Mat	1a		K1a		
33			5		Arist	Eng	1a		K1a		

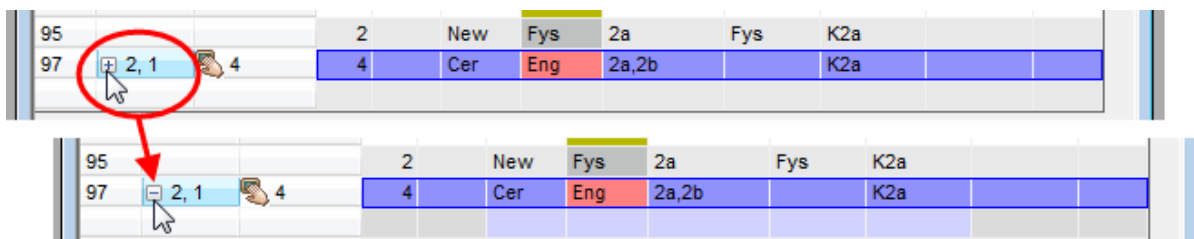
Skift til klasse 1b. Her vises den nye undervisning automatisk.

Koblet undervisning (flere klasser og lærere)

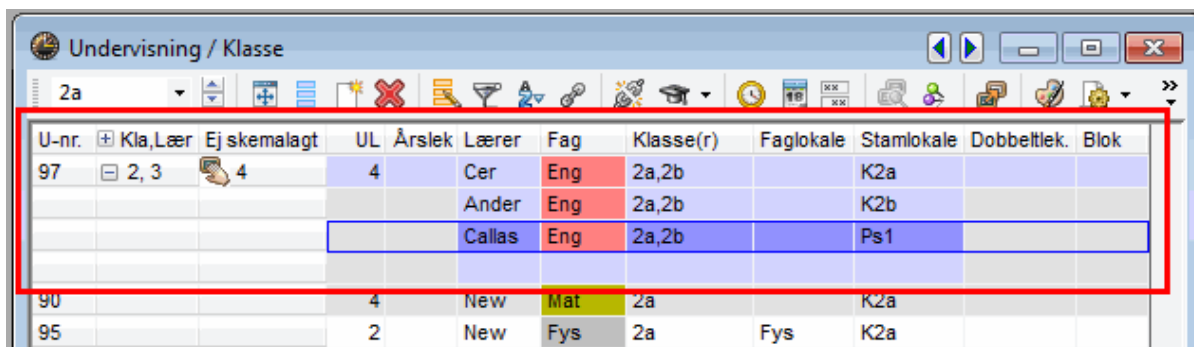
Der skal undervises niveaudelt i faget engelsk i fire timer i anden klasse. Dvs. at eleverne fra 2a og 2b deles i tre grupper, som skal undervises af hver sin lærer (Cer, Ander og Callas) i hver sit lokale:

UL	Lærer	Fag	Klasse(r)	Lokale
4	Cer	Eng	2a,2b	K2a
4	Ander	Eng	2a,2b	K2b
4	Callas	Eng	2a,2b	PS1

1. Åbn undervisningsvisningen for 2a. ('Undervisning | Klasser' og vælg 2a)
2. Indtast '4' i kolonnen 'UL' og bekræft med <Tab>.
3. Vælg 'Cer' i dropdown-menuen i kolonnen 'Lærer'. Det gør ingen forskel, hvilken lærer der vælges først.
4. Vælg 'Eng' i dropdown-menuen i kolonnen 'Fag'.
5. I kolonnen 'Klasse(r)' indtaster du 2a og 2b adskilt med komma.
6. Stamlokalet for 2a ('K2a') vises skraks i kolonnen for dette.
7. Før cursoren over kolonnen 'Kl,Lær' for den netop oprettede undervisning og klik på det fremkomne '+'. I den herved fremkomne tomme linie indtastes næste lærer 'Ander' i kolonnen 'Lærer', 'Eng' i kolonnen 'Fag' og '2a,2b' i kolonnen 'Klasse(r)'.



8. I kolonnen 'Stamlokale' vælges lokale 'K2b', da 'Cer' jo underviser sin gruppe i lokale 'K2a'.
9. Indtast nu parametre i tredje linje for 'Callas' med et nyt lokale.



Der vil nu konstant ses et '+' i kolonnen 'Kla,Lær'. Med et klik herpå, fremkommer den totale information. Beslut selv, om du kan nøjes med første linje eller vil se den totale information.

Tip: Udfolde alle koblinger

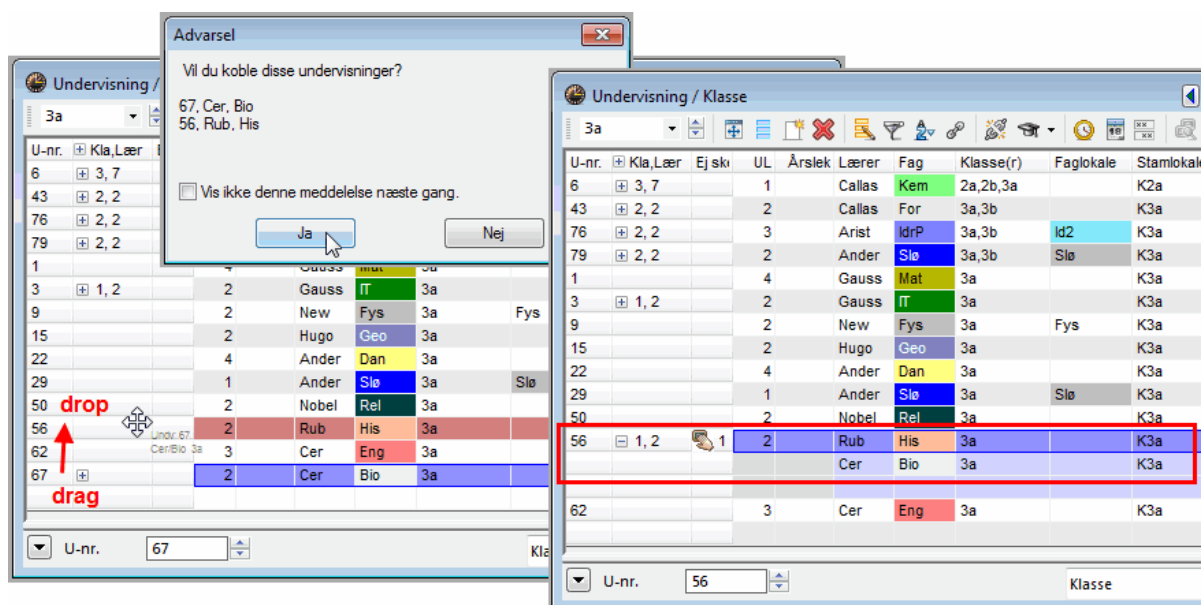
Med et klik på '+' i kolonneoverskriften kan du udfolde samtlige koblinger.

Yderligere information ang. koblinger finder du i kapitlerne [Kobling af undervisning](#) og [Afkobling af undervisning](#)

2.3.4 Kobling af undervisning

Kobling via drag&drop

Hvis du vil koble to eksisterende undervisninger, klikker du på én af de to i kolonnen 'Kla,Lær' og trækker med drag&drop hen på den undervisning, som du vil koble den med. Så snart du slipper, er de to undervisninger koblet.



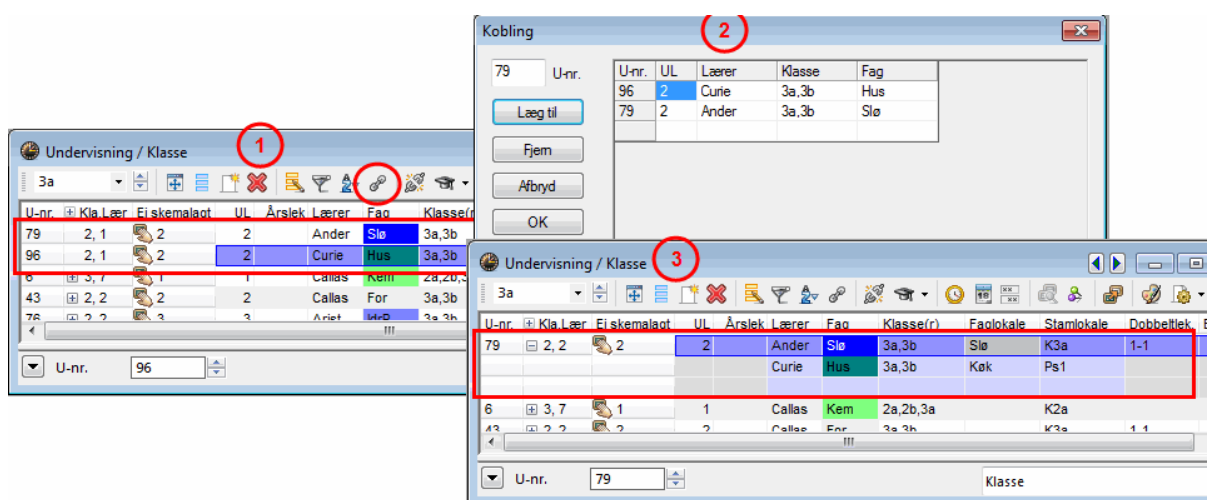
Ligeså simpelt er det igen at afkoble koblet undervisning. I kolonnen 'Kla,Lær' trækker du den koblingslinje, som du vil fjerne fra koblingen, via drag&drop hen til en fri linje i samme kolonne. Undervisningerne er nu afkoblet.

Kobling via menuknapp

Når du vil koble to eksisterende undervisninger, markerer du den ene og klikker herefter på menuknappen <Kobling>. Der fremkommer nu en dialogboks, i hvilken den markerede undervisning ses. Du har nu to muligheder for at tilkoble en undervisning:

- Aktiver den ønskede undervisning i Undervisningsvinduet og klik efterfølgende i dialogboksen på knappen <Læg til>.
- Træk undervisningsnummeret ind med drag&drop og klik efterfølgende i dialogboksen på knappen

<Læg til>.



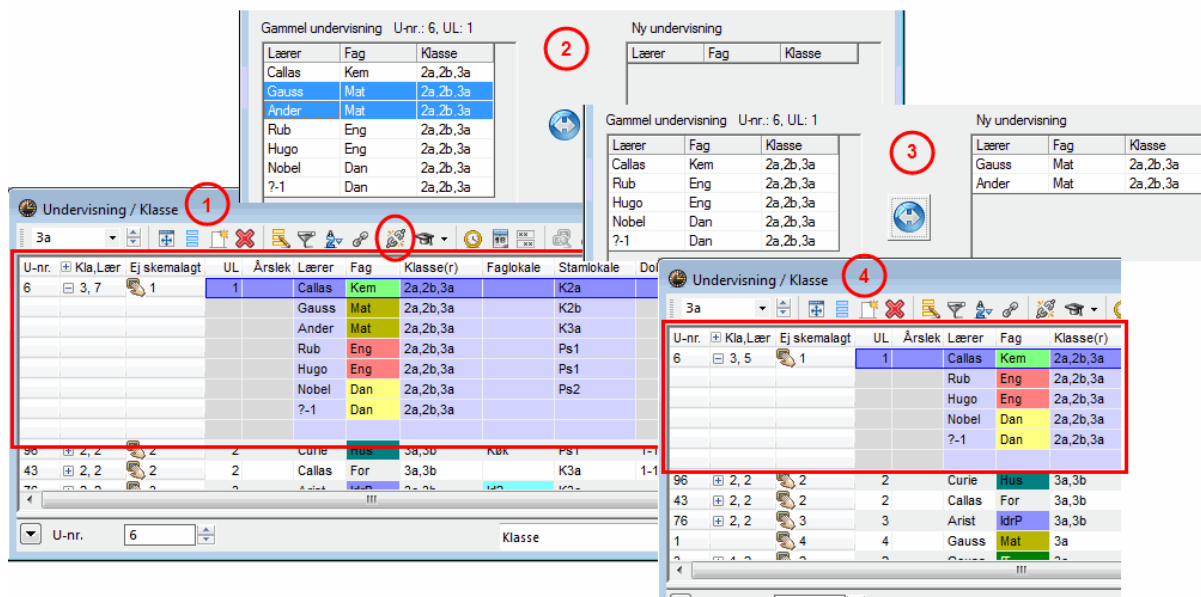
2.3.5 Afkobling af undervisning

I foregående kapitel blev beskrevet, hvordan du kan koble undervisning med drag&drop.

Afobling via menuknap

Med denne funktion kan du ændre de enkelte [Koblingslinjer](#) i en koblet undervisning til selvstændige undervisninger med eget undervisningsnummer.

Marker en kobling og klik efterfølgende på menuknappen <Udvidet opløsning af kobling>. Der fremkommer nu en dialogboks, hvori du kan vælge, hvilke koblingslinjer der skal fjernes fra koblingen.

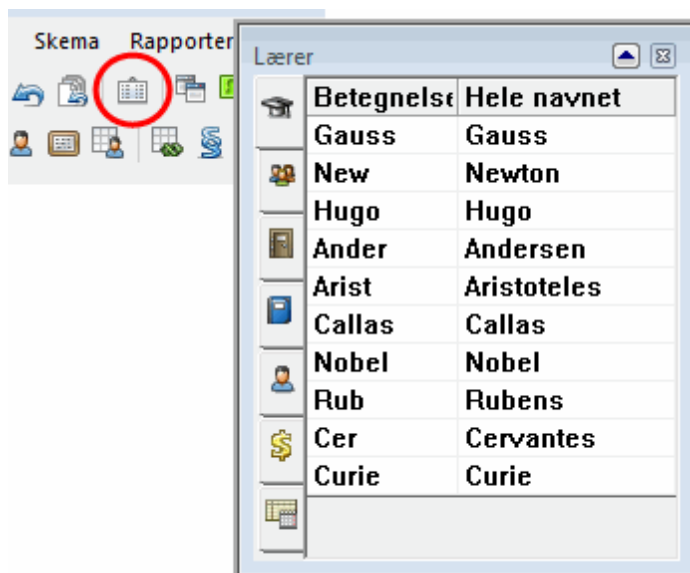


OBS: Afkoble alle
 Når du klikker på knappen <Opløs hele koblingen>, fjernes også alle klassekoblinger. Dette kan være et drastisk indgreb i fordelingen af undervisning.

Når du kun vil opløse en kobling i div. koblingslinjer, men beholde klassekoblingerne, skal du i venstre del af dialogboksen markere alle linjer og efterfølgende klikke på dobbelpilen i midten. Afslut med <OK>.

2.3.6 Undervisningsindtastning med drag&drop

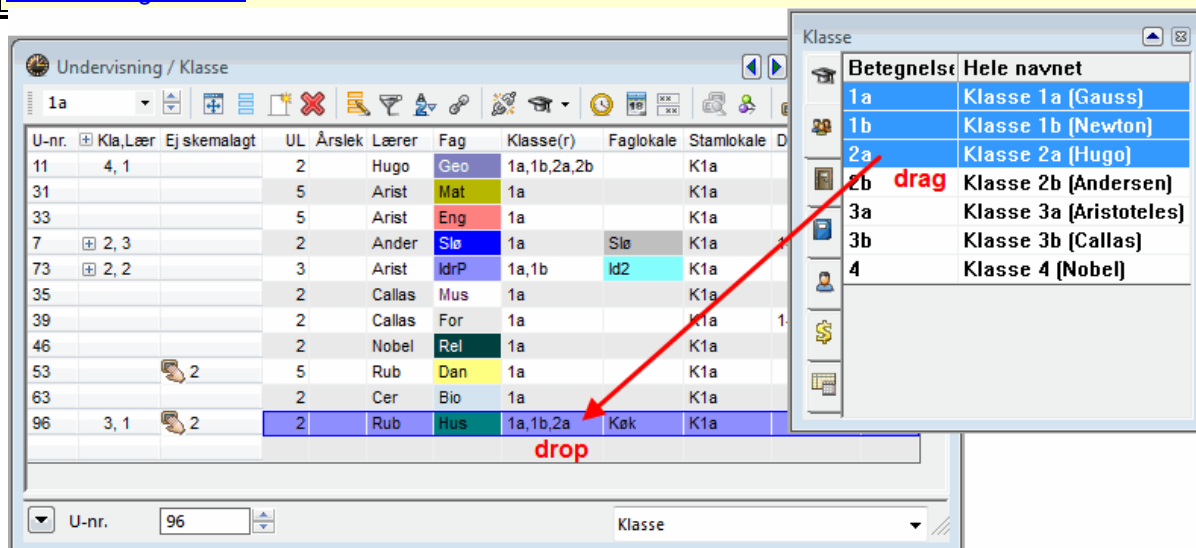
Undervisningsindtastning kan også klares med drag&drop fra Elementvindue . 'Elementvindue' kan du åbne via 'Stamdata | Elementvindue' eller via menuknappen i Hovedmenuen.



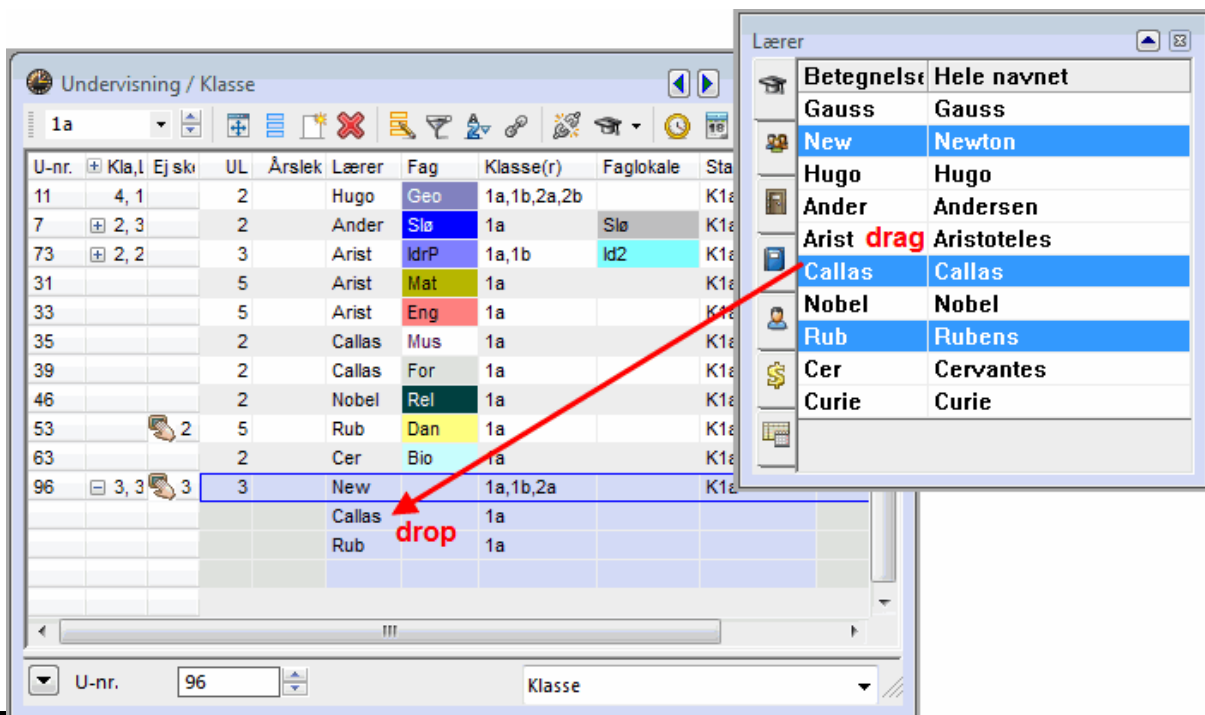
I dette 'Elementvindue' kan du vælge mellem de forskellige stamdata og trække dem med drag&drop over i en visning fra [Undervisningsvinduet](#) .

OBS: Flere elementer

Med holdt 'Ctrl'-tast kan du markere flere elementer og herefter trække dem samtidigt over i [Undervisningsvinduet](#) .



Når du trækker flere klasser over i Undervisningsvinduet, indsættes de alle i samme [Koblingslinje](#) . Hvis du derimod trækker flere lærere ind i en oprettet undervisning, vil der blive oprettet én linje for hver lærer.

**OBS: Dobbelklik**

I stedet for drag&drop-teknik kan der også anvendes dobbeltklik i elementvinduet.

2.3.7 Clipboard

You can copy selected (highlighted) lessons to the clipboard. These functions can be accessed under menu item 'Edit', or you can use the following shortcuts:

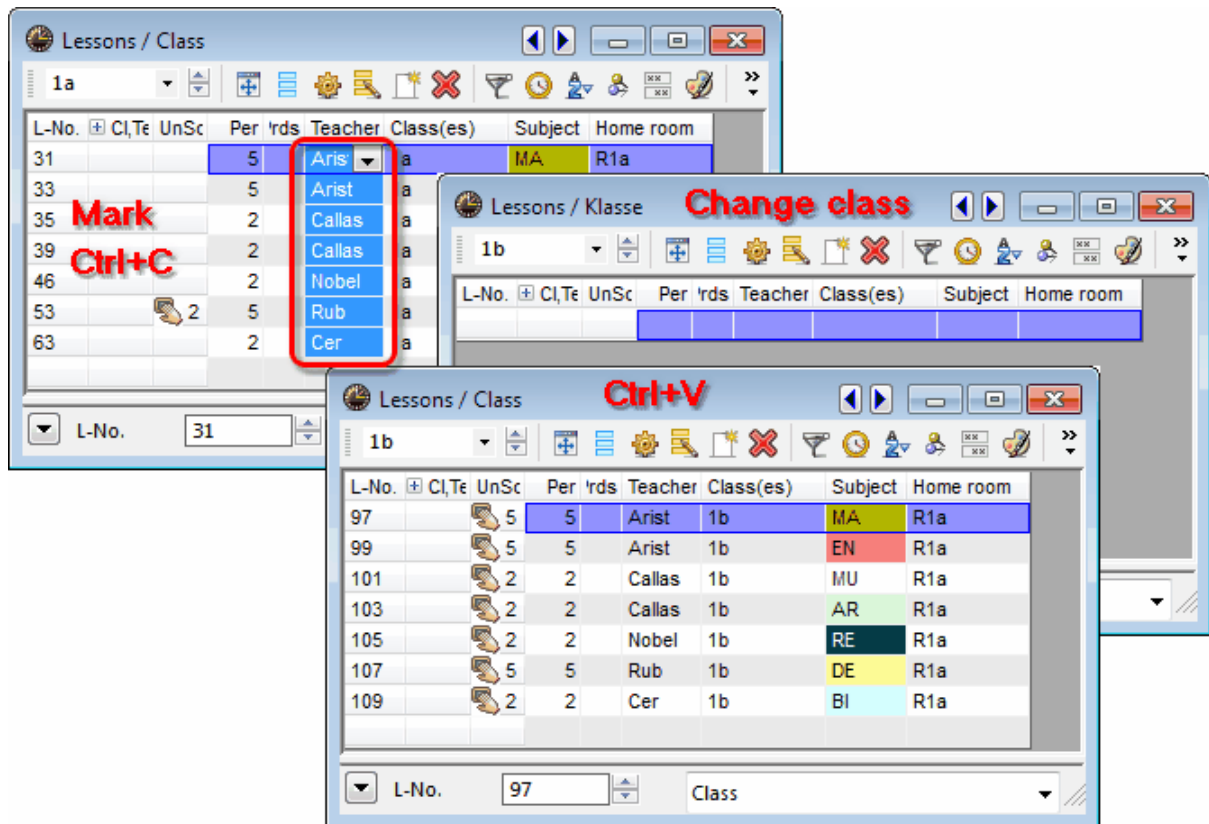
CTRL + X = Cut
 CTRL + C = Copy
 CTRL + V = Paste

Programme-internal use

The clipboard function allows you to copy one or more lessons of one class to another or from one term> to another (with the Multiple term module).

If you wish for example to copy all lessons from class 1a to class 1b

- highlight all lessons,
- select 'Edit | Copy',
- switch to class 1b (which still has no lessons) and
- select 'Edit | Paste'.



Paste special

Tip: Copying timetables

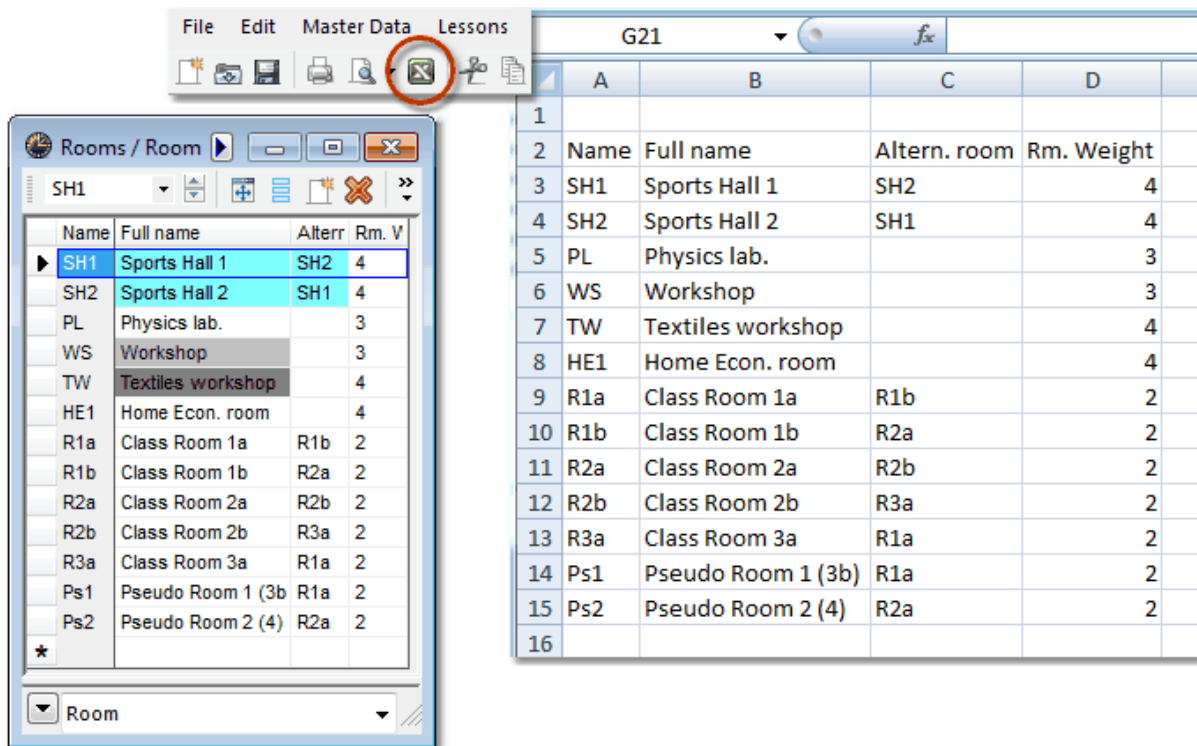
The 'Paste special' functions allows you to copy timetables.

In addition to the usual paste function, the 'Edit' menu also provides the 'Paste special' function. Besides inserting lessons, this function also inserts the timetable of the copied lessons, i.e. the timetable of the source class is also copied.

Copying data to external programmes

You can also use the clipboard to export lessons (or other data) to external programmes such as spreadsheets or word processors.

Many views also offer the <Print in Excel> option allowing you to export directly to a spreadsheet.



2.4 Egenskaber for undervisning

Udover de basale data for en undervisning, kan du definere endnu en del egenskaber. Indtastning af disse egenskaber - bortset fra tidsønsker - kan foretages enten i 'Listevisning' eller i 'Kartotekskortvisning'. Kartotekskortene som efterfølgende beskrives, findes alle i [Kartotekskortvisning](#) :

- [Tidsønsker](#)
- [Kartotekskortet 'Undervisning'](#)
- [Kartotekskortet 'Skema'](#)
- [Kartotekskortet 'Styrekoder'](#)
- [Kartotekskortet 'Værdier'](#)
- [Kartotekskortet 'Koblingslinjer'](#) (Kopplungszeile)

2.4.1 Undervisning med tidsønske

Når du skal se tidsønsker gives der tre forskellige muligheder:

Tidsønsker for undervisningen

Hver enkelt undervisning kan forsynes med et tidsønske. Den generelle funktion for tidsønsker er beskrevet i kapitlet [Tidsønsker](#) , afsnit [Brugertips](#) . Et tidsønske kan dog ikke angives som '+3'. I et sådant tilfælde skal undervisningen skemalægges manuelt og låses.

Tidsønsker for alle elementer

For en given undervisning nedarves tidsønskerne for de involverede [Stamdata](#) . Når f.eks. Victor Hugo har sin fridag om tirsdagen, kan der heller ikke lægges undervisning om tirsdagen, hvori Hugo skal deltage.

Visningen 'Tidsønsker for alle elementer' ('Undervisning | Klasser' - klik på menuknappen 'Tidsønsker' -

klik på knappen 'Tidsønsker for alle elementer') giver dig, i det midterste område, alle tidsønsker for alle i den valgte undervisning involverede elementer. I dette område kan du klikke på en bestemt ugedag og i det underste felt se, hvilke af de involverede elementer der er ansvarlige for tidsønskerne.

The screenshot shows two windows. The top window, 'Undervisning / Klasse', displays a table of teaching elements. The bottom window, 'Tidsønsker / Undervisning-75', shows the time request settings for a specific teaching element (U-nr. 18). In the 'Tidsønsker' window, the radio button 'Tidsønsker for alle elementer' is selected and circled in red. Below it is a table showing time requests for each day of the week. A red arrow points from the 'Mandag' row in this table to the 'Mandag' row in the detailed view below.

	1	2	3	4	5	6	7	8	Da	For	Efterm
Mandag	+3	+3	+3	+3			-3	-3			
Tirsdag									-3		
Onsdag	+3	+3	+3	+3							
Torsdag	+3	+3	+3	+3							+3
Fredag	+3	+3	+3	+3							
Lørdag	+3	+3	+3	+3							

	betegn	1	2	3	4	5	6	7	8	Dage	Fom.	Efterm
Lærer	Hugo							-3	-3			
Klasse(r)	2a	+3	+3	+3	+3							
Fag	His											
Lokaler	K2a											
Undervisning	18											

Tidsønsker for alle elementer u. lokaler

Da [Lokalefordelingen](#) stadig kan ændres af optimeringen, er tidsønsker for lokaler ikke så vigtig som for andre elementer. Af denne grund kan du unnlade dem med denne nederste valgmulighed.

2.4.2 Kartotekskortet 'Undervisning'

På kartotekskortet 'Undervisning' kan du angive følgende oplysninger:

Ugelektioner / Årslektioner, Lærer, Fag, Klasse(r), Lokale

De til undervisningen hørende Stamdata såvel som timetallet er de væsentligste oplysninger om en given undervisning. Indtastningen er tidligere beskrevet i kapitlet [Indtastning af undervisning](#) .

Delingsnr.

Delingsnummeret er nødvendigt, for at timetallet også beregnes rigtigt i forbindelse med delte hold. En deling kan f.eks. være, at der undervises i engelsk i 2 grupper, men undervisningen ikke er koblet og altså ikke finder sted samtidigt. Der findes altså 2 undervisningslinjer med hver 5 timer, som dog kun tæller 5 timer tilsammen i klassetimetallet.

Får begge undervisningslinjer (-numre) tildelt samme 'Delingsnr.' (tilladte værdier fra 0 til 255), følger beregningen af samlet timetal for klassen den ovenstående model. En undervisning med 'Delingsnr.' '0' tælles ikke med i det samlede klassetimetale.

Du kan også tildele samme 'Delingsnr.' til flere end 2 undervisningslinjer for en klasse. Det største timetal i denne deling tæller herefter med i det samlede klassetimetale.

Alias (Andet navn)

Som for Stamdata-elementer kan du også i 'Undervisning' tildele alias. En beskrivelse af denne funktion finder du i kapitlet [Stamdata - Kartotekskort Klasser](#) .

Lokaler

Her kan du indtaste det for undervisningen ønskede (fag-)lokale. Er der ved faget angivet et [Faglokale](#) , bliver dette lokale automatisk anvendt ved skemalægningen.

Stamlokale

Hvis der indtastes data via 'Undervisning | Klasser' skal her indtastes [Stamlokale](#) for klassen. Hvis du

indtaster i 'Undervisning | Lærer', er det lærerens Stamlokale .

U-grupper

Hvis du anvender modulet 'Multiuge/Periodeskema' kan du her indtaste Undervisningsgruppe. Mere herom finder du i kapitlet Undervisningsgrupper i afsnittet 'Multiuge/Periodeskema'.

Statistikkoder

Som for Stamdata. Du kan tildele hver undervisning flere statistikkoder. Disse koder er nyttige, hvis du vil foretage et udtræk efter bestemte kriterier.

Faggruppe

Er et fag tilknyttet en bestemt faggruppe, skal det angives her. Anvendelse af [Faggrupper](#) er specielt nyttigt i forbindelse med Lærerkvalifikationer og Tidsplaner (modul Fagfordeling og tjenestetidsberegning).

Elever (D) / Elever (P) / i alt

Her kan du indtaste det antal personer (hankøn/hunkøn), som deltager i den aktuelle undervisning. Summen vises i feltet 'i alt'. Denne indtastning har indflydelse på lokaletildelingen i forbindelse med 'Optimering' og 'Lokaleoptimering'.

Tekst

Her kan enhver undervisning tilføjes en tekst. Denne tekst vises også i 'Skema'-visningerne i kolonnen *Særlig tekst' og kan også indsættes i selve Skemaruden .

U-nr.	Kla,l	Ej ski	UL	Årslek	Lærer	Fag	Klasse(r)	Tekst	Faglokale
11	4, 1		2		Hugo	Geo	1a,1b,2a,2b	udetime	

4	10:45 11:30	IdrP, Arist IdrD Rub	Id2 Id1 1)	For Callas K1a		Dan Rub K1a	Mat Arist K1a	Dan Rub K1a	Geo. Hugo K1a udetime
5	11:40 12:25			Rel Nobel K1a					
6	12:35 13:20								
7	13:30 14:15			Slø. Ande Hån Curie Hån	Slø Hån 2)				
8	14:25 15:10							IdrP, Arist IdrD Rub	Id2 Id1 1)

U-nr.	Lærer, fag, lok	Kl.	Tid	Skoleuge	Elev	Særlig tekst	Bånd	Linjetekst 2
11	Hugo, Geo, K1a	1a, 1b, 2a, 2b	1-41			udetime		
+3								

Linjetekst/Linjetekst 2

Via disse to felter kan du også tildele en tekst til den enkelte [Koblingslinje](#) for en undervisning.

2.4.3 'Timetable' tab

You can specify the following settings on the 'Timetable' tab:

Double periods Min. Max.

Entering double periods and blocks was already dealt with in chapter [Double period - block](#).

Periods in this subject room

If a subject room is defined for a lesson, the [optimisation](#) routine will attempt to schedule all periods of the lesson in this room. This is sometimes not desired when there is a shortage of rooms or when rooms are overbooked. If for example only two of three physics lessons are to be held in the physics lab, then enter a '2' here. As a rule, no entry is required in this field.

Scheduling priority

When you launch optimisation, Untis will first calculate the level of difficulty for all lesson periods. A lesson is all the more difficult to place if there are a lot of elements involved in it and if there are restrictive time requests specified for the elements.

The algorithm that Untis uses to place a lesson starts with the most difficult periods first. You have the chance to influence the scheduling sequence by setting a scheduling priority. The smaller the number entered for the priority (1-9) the earlier the lesson will be placed and the greater the likelihood of finding a 'good' position.

If this field is left empty, a default priority of 5 will be assumed; values of 1-4 increase priority while values of 6-9 decrease it. Lessons with a scheduling priority of 9 will be processed last while those with a priority of 1 will be treated first.

Warning:

An entry in this field can have a drastic influence on the way optimisation works. As a general rule, it can have a negative impact on the overall result, which is why it should only be used for good reason and with due consideration.

Teacher optimisation code

With the teacher optimisation code, the Lesson planning module offers the possibility of influencing [Teacher assignment](#) during optimisation. You will find details in chapter [Teacher optimisation](#) under [Optimisation](#) .

Unscheduled periods

This value indicates how many periods of the current lesson have not yet been scheduled in the timetable.

Time range

The Multi-week timetable module allows you to set time restrictions for lessons.

Subject sequence - Classes/Subject Sequence - Teachers

As with master data, there is also the field subject sequence for lessons. Permitted entries are 1 - 9 for a positive subject sequence and A - E for a negative subject sequence. Please also see chapter [Subject sequence](#) in the [User tips](#) section.

Class Clash Code (Class Clash Code, CCC)

This code allows Untis to schedule two lessons at the same time even when the same class is involved in both lessons. Enter values 1 - 9 where a conflict is permissible between lessons with the same CCC, and A - H where a conflict is permissible between lessons with different non-numeric CCCs. Please also see chapter [Subject sequence](#) in the [User tips](#) section.

2.4.4 'Codes' tab part 1

There is a large number of codes available with which you can define lessons more precisely.

Lessons	Timetable	Codes	Values	Coupling Line
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (X) Locked	<input type="checkbox"/>	<input type="checkbox"/> (B) Lock conditionally
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (i) Ignored	<input type="checkbox"/>	<input type="checkbox"/> (D) Respect double periods
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (m) Marked	<input type="checkbox"/>	<input type="checkbox"/> (C) No single periods
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (E) Double pers. span *-breaks	<input type="checkbox"/>	<input type="checkbox"/> (R) Place in a fringe period
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (O) Optional subject	<input type="checkbox"/>	<input type="checkbox"/> (S) Schedule class group later
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (G) No fringe period placement	<input type="checkbox"/>	<input type="checkbox"/> (2) Subject more than once./day
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (K) No altem. room to be used	<input type="checkbox"/>	<input type="checkbox"/> (V) Variable teacher
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (k) Exempt from data-analysis	<input type="checkbox"/>	<input type="checkbox"/> (L) Not in legend
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (r) All prds. in the same room	<input type="checkbox"/>	<input type="checkbox"/> (U) p.m. only double periods
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Teacher allocation locked	<input type="checkbox"/>	<input type="checkbox"/> (M) Schedule manually
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Time requests		

(X) Locked, (i) Ignore, (m) Marked

The way these codes work was already explained in chapter [Input fields for master data](#) .

In lesson views, ignored lessons are marked with the letter (i) next to the lesson number.

L-No.	Cl,Te	UnSc	Per	/rsPrds	Teacher	Subject	Class(es)
33		2	5		Arist	EN	1a
35	(i)		2		Callas	MU	1a
39	(i)		2		Callas	AR	1a
46		1	2		Nobel	RE	1a
53		2	5		Rub	DE	1a
63			2		Cer	BI	1a

(E) Double pers. span *-breaks

Double periods are not allowed to span breaks, which are marked in the timetable with a '*'. Use the (E) code to deactivate this restriction for specific lessons.

(O) Optional subject

Lessons for which this code is activated are treated during optimisation as if an optional subject were involved. For further details, please refer to chapter [User tips – Optional subjects and fringe periods](#).

(G) No fringe period placement

Activate this code if a particular lesson should not be scheduled in a fringe period. For further details, please see chapter [User tips – Optional subjects and fringe periods](#).

(K) No altern. room to be used

Lessons marked (K) may only be scheduled in the designated room. Scheduling in alternative rooms is not allowed.

(k) Exempt from data analysis

Use this code to exclude a lesson from the automated data analysis function of the [diagnosis](#) tool.

Warning:

Activate this function only when you have made sure that the lesson in question will not obstruct the optimisation tool.

(r) All prds. in the same room

All periods of a lesson marked with this code will take place in the same room. This code has a major influence on room optimisation. A lesson marked with the (r) code can even displace a class from its own home room. Please read chapter [User tips – Room logic](#) for further details before attempting to use this function.

Teacher allocation locked

The teacher assigned to teach a class can be locked separately for each coupling line to ensure that the placement cannot be changed by the automated teacher allocation function (only possible with the 'Lesson planning and value calculation' module) (please see also chapter Optimisation).

Time requests

This box will be automatically checked if [time requests](#) have been entered for this lesson.

2.4.5 'Codes' tab part 2

Below is a description of the codes in the second column.

Lessons	Timetable	Codes	Values	Coupling Line
<input type="checkbox"/> (X) Locked				<input type="checkbox"/> (B) Lock conditionally
<input type="checkbox"/> (i) Ignored				<input type="checkbox"/> (D) Respect double periods
<input type="checkbox"/> (m) Marked				<input type="checkbox"/> (C) No single periods
<input type="checkbox"/> (E) Double pers. span *-breaks				<input type="checkbox"/> (R) Place in a fringe period
<input type="checkbox"/> (O) Optional subject				<input type="checkbox"/> (S) Schedule class group later
<input type="checkbox"/> (G) No fringe period placement				<input type="checkbox"/> (2) Subject more than once/day
<input type="checkbox"/> (K) No altern. room to be used				<input type="checkbox"/> (V) Variable teacher
<input type="checkbox"/> (k) Exempt from data-analysis				<input type="checkbox"/> (L) Not in legend
<input type="checkbox"/> (r) All prds. in the same room				<input type="checkbox"/> (U) p.m. only double periods
<input type="checkbox"/> Teacher allocation locked				<input type="checkbox"/> (M) Schedule manually
<input type="checkbox"/> Time requests				

(B) Lock conditionally

Lessons marked with this code are treated as locked lessons during the first part of the optimisation run (placement run). During the subsequent optimisation run (swap run), however, the temporary locking function is automatically deactivated (please see also chapter [Optimisation](#))

(D) Respect double periods

Activate this function for a lesson (or a subject) if you wish the optimisation tool to adhere strictly to the number of permitted (desired) [double periods](#) . This also applies when double periods have been excluded for a lesson ('0-0' in the field 'Double periods min., max.'). The function is particularly useful when the optimisation errors 'Double per. split up', 'Unrequ. double pers. ' and 'Subject twice a day' are to be avoided at all costs.

Warning: Use sparingly

Please use this code sparingly (if in doubt, please do not use it at all), since it places severe restrictions on optimisation – especially for subjects with a large number of periods. If necessary, increase the corresponding weighting parameters ([Avoid errors with double period](#)) to 5 before using it.

- Please also note that to ensure the correct treatment of double periods, data must be entered in the 'Double periods min, max' field.
- Setting the (D) code excludes the use of codes (2) and (C).

(C) No single periods

Setting the (C) code gives priority to scheduling the lesson in questions as block. Single periods will be avoided if at all possible.

- This code is only useful for lessons with more than 6 periods per week.
- Codes (2), (C) and (D) are mutually exclusive.

(R) Place in a fringe period

Use this option to specify lessons that should be scheduled in fringe periods in the same way as fringe lessons. The attribute ensures that lessons marked in this way are scheduled preferentially at the beginning or the end of a school day or half-day (depending on the timetable). Please also refer to chapter [User tips / Fringe periods and optional subjects](#) .

(S) Schedule class group later

You can change the scheduling priority for the lessons when using [class groups](#) . The code instructs the [optimisation](#) tool to leave the scheduling of these lessons until after other classes of the same class group have been scheduled.

- Use this code only when you are familiar with working with class groups.

(2) Subject more than once/day

The Untis optimisation algorithm assumes that a subject should only be scheduled once a day for any one class (except [block lessons and double periods](#)). You can use this flag to override this – highly weighted – boundary condition. Untis will then be allowed to schedule the subject as it thinks fit.

- The options (2), (C) and (D) are mutually exclusive.

(V) Variable teacher

When this code is set Untis may replace the teacher(s) involved in the lesson with more suitable teachers when bottlenecks are encountered during optimisation. Please refer to chapter [Optimisation](#) for further details.

(L) Not in Legend

No legend will be printed for lessons where this code is set.

(U) p.m. only double periods

This code ensures that the automated [optimisation](#) function will only schedule double periods (and no single periods) in the afternoon. This code only makes sense when

- double periods are permitted for the lesson and
- the subject is marked as a subject that can take place in the afternoon.

(M) Schedule manually

Lessons marked (M) are ignored by the optimisation tool. These lessons must be scheduled manually.

2.4.6 'Values' and 'Coupling line' tabs**'Values' tab**

This tab will only be displayed with the module Lesson planning and value calculation . Please refer to chapter Values under Value calculation for details on the fields.

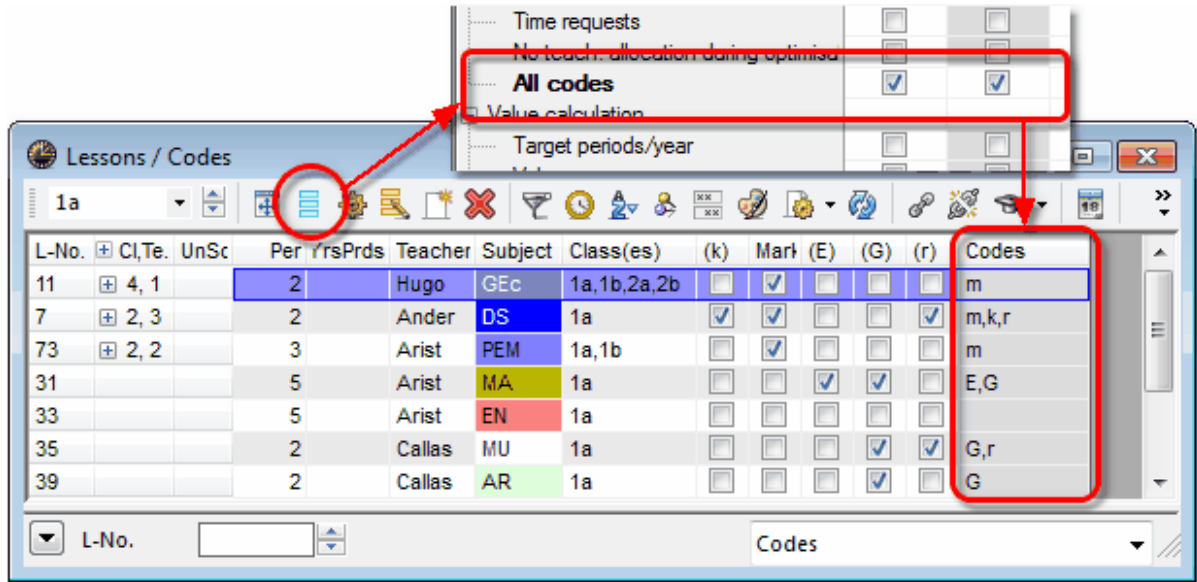
'Coupling line' tab

This tab contains fields that are only relevant for a coupling line but not for the entire coupled lesson. Most fields can be found on the [Lessons' tab](#) and are described there.

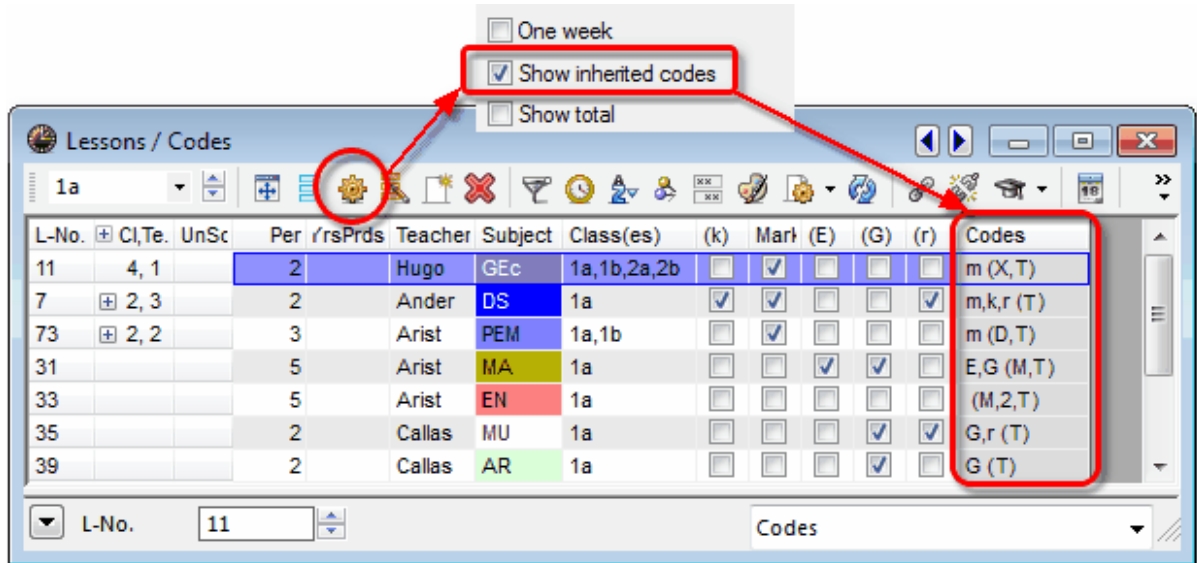
The fields 'Teacher allocation locked' and '(Teacher)' are described in chapter Automatic teacher assignment during optimisation under Lesson planning.

2.4.7 All codes

This field, which can only be activated in the grid view via the <Grid Adjustment> button, offers an excellent overview of the relevant timetable settings of a lesson. The 'Code' column clearly and comprehensively displays all the codes set for a lesson. The code Z denotes lessons where a time request has been entered.

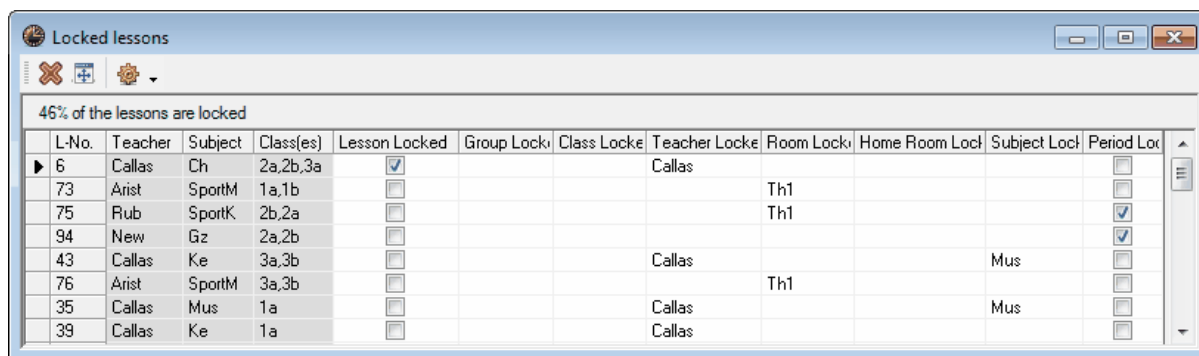


Check the relevant box under <Settings> in this lessons window if you wish inherited codes, i.e. codes entered for a master data element of these lessons, to be displayed in parentheses.



2.4.8 Locked lessons

The menu item 'Lessons | Locked lessons' allows you to open a window listing all [locked lessons](#) . It is irrelevant if the lessons in question have been locked as [individual periods](#) , as [lessons](#) or via another [element](#) or lesson group .



46% of the lessons are locked

L-No.	Teacher	Subject	Class(es)	Lesson Locked	Group Lock	Class Lock	Teacher Lock	Room Lock	Home Room Lock	Subject Lock	Period Lock
6	Callas	Ch	2a,2b,3a	<input checked="" type="checkbox"/>			Callas				
73	Arist	SportM	1a,1b	<input type="checkbox"/>				Th1			<input type="checkbox"/>
75	Rub	SportK	2b,2a	<input type="checkbox"/>				Th1			<input checked="" type="checkbox"/>
94	New	Gz	2a,2b	<input type="checkbox"/>							<input checked="" type="checkbox"/>
43	Callas	Ke	3a,3b	<input type="checkbox"/>			Callas			Mus	<input type="checkbox"/>
76	Arist	SportM	3a,3b	<input type="checkbox"/>				Th1			<input type="checkbox"/>
35	Callas	Mus	1a	<input type="checkbox"/>			Callas			Mus	<input type="checkbox"/>
39	Callas	Ke	1a	<input type="checkbox"/>			Callas				<input type="checkbox"/>

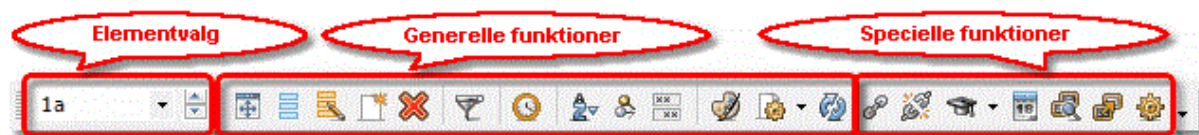
You can remove locked lessons from the window by clicking on the cell in question and then clicking on the <Delete> button in the toolbar.

Note:

It is not enough to select the row in question – you must click on the cell in the row that causes it to be locked. You can read more about locking in chapter [Locking](#) in the [User tips](#) section.

2.5 Funktioner i Menulinien

De generelle funktioner er blevet forklaret i kapitlet [Stamdata / Funktioner i Menulinien](#) .



De specielle funktioner som kun forefindes i Undervisning-visningen:

Kobling

Se kapitlet [Kobling af undervisning](#) .

Udvidet opløsning af kobling

Se kapitlet [Opløsning af kobling](#) .

Lærerforslag

Se kapitlet Lærerforslag , afsnit Undervisningsplanlægning .

Skoleårskalender

Med modulet Multiuge/Periodeskema kan du tidsafgrænse brugen af stamdataelementer og lektioner, såvel som definere Undervisningsgrupper . Skoleårskalenderen viser dig med grøn farve de tidsrum, hvori

undervisningen kan lægges.

L-No.	Cl,Te.	UnSc	Per	rds	Teacher	Subject	Class(es)	Les. groups	From	To
31			5		Arist	Mat	1a	Week A	3.10.	5.5.
63			2		Cer	Bio	1a			

	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo							
September																																				
October	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
November				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
December						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
January		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
February					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				
March					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
April	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30						
May			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
June						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	

Skemasammenligning

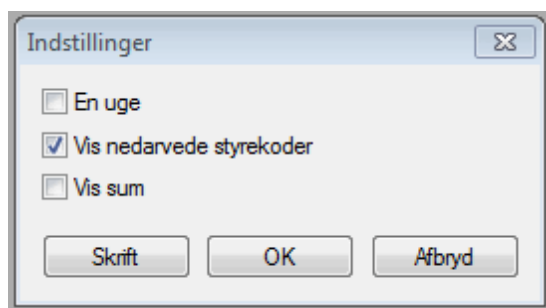
Se kapitlet Skemasammenligning , afsnit Undervisningsplanlægning .

Overtag undervisningen som kursus

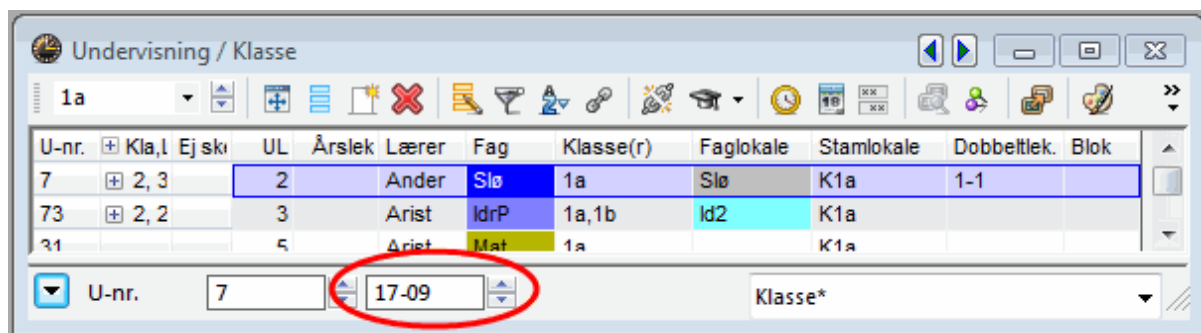
Se kapitlet Oprette kurser , afsnit Kursusplanlægning .

Indstilling

Med 'Indstilling' kan du tilpasse 'Listevision' i Undervisnings-vinduet efter dine personlige behov.



- **Én uge** - Denne afkrydsning er kun aktiv i forbindelse med modulet [Multiuge/Periodeskema](#) . Her vises kun den undervisning, som finder sted i den valgte uge.



- **Vis nedarvede styrekoder** - Denne mulighed fungerer via fanen 'Styrekoder'. Den præcise beskrivelse af fanen, finder du i kapitlet Vis styrekoder .

- **Vis sum** - Ved hjælp af denne indstilling får du indsat en sum-linje under overskriftslinien i 'Listevisning'. For numeriske felter foretages her en opsummering.

The screenshot shows the 'Undervisning / Klasse' application. The main window displays a table with the following columns: U-nr., Klasse, Fag, Klasse(r), Faglokale, Stamlokale, Dobbeltlek, Blok, and Koder. The first row of data is highlighted with a red box, showing '2' in the U-nr. column, '30.00' in the Klasse column, and '0' in the Fag column. An 'Indstillinger' dialog box is open in the top right corner, with the 'Vis sum' checkbox checked. A gear icon in the toolbar is also highlighted with a red box.

U-nr.	Klasse	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek	Blok	Koder
2	30.00	0						
11	4, 1	Hugo	Geo	1a,1b,2a,2b	K1a			
7	2, 3	Ander	Slø	1a	Slø	K1a	1-1	D,E,k
73	2, 2	Arist	IdrP	1a,1b	Id2	K1a		
31		Arist	Mat	1a		K1a		

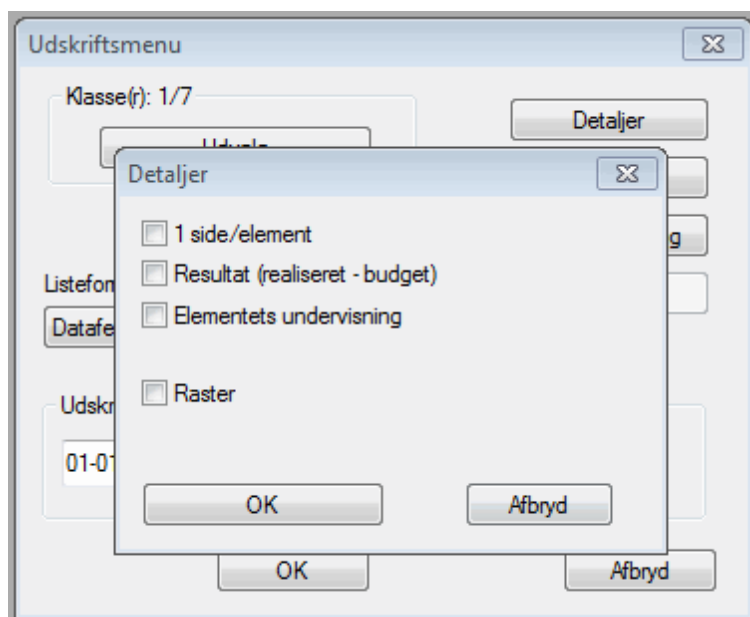
Tip: Kontekstmenu

Summeringslinjen kan du også fremkalde ved at højreklikke på kolonneoverskriften.

2.6 Print

For print af Undervisningsvisninger gælder det samme som for print af Stamdatavisninger.

Via knappen 'Detaljer' i Udskriftsmenuen finder du flere kun for 'Undervisningsvisninger' relevante indstillingsmuligheder.



1 side/element

Med denne mulighed printes lektionerne for hhv. lærere og klasser ud på separate sider.

Resultat (realiseret - budget)

Med denne mulighed printes en 'Resultat-linie'. Denne funktion er kun brugbar i forbindelse med modulet [Fagfordeling og tjenestetidsberegning](#).

Elementets undervisning

I tilfælde af 'koblet undervisning' sørger denne funktion for, at de for det aktive element irrelevante linjer IKKE printes.

U-nr.	Kla,Leær	Ej skemalagt	UL	Arslek	Lærer	Fag	Klasse(r)	Fag
6	3,7	1	1		Callas	Kem	2a,2b,3a	
					Gauss	Mat	2a,2b,3a	
					Ander	Mat	2a,2b,3a	
					Rub	Eng	2a,2b,3a	
					Hugo	Eng	2a,2b,3a	
					Nobel	Dan	2a,2b,3a	
					?-1	Dan	2a,2b,3a	
7	2,3	2	2		Ander	Slø	1a	
					Gauss	Slø	1b	
					Curie	Hån	1a,1b	
1		4	4		Gauss	Mat	3a	
3	1,2	2	2		Gauss	IT	3a	
					Curie	Hån	3a	
4	1,2	2	2		Gauss	IT	3b	
					Curie	Hån	3b	
5		2	2		Gauss	IT	4	
82	1,2	4	4		Ander	Mat	4	
					Gauss	Mat	4	

U-nr.	Kla,Leær	Ej skemalagt	UL	Arslek	Lærer	Fag	Klasse(r)	Fag
6	3,7	1	1		Gauss	Mat	2a,2b,3a	
7	2,3	2	2		Gauss	Slø	1b	Slø
1		4	4		Gauss	Mat	3a	
3	1,2	2	2		Gauss	IT	3a	
4	1,2	2	2		Gauss	IT	3b	
5		2	2		Gauss	IT	4	
82	1,2	4	4		Gauss	Mat	4	

17.000 (Realiseret+Ø-tid) - **0.000** (Budgettimer) = **17.000**

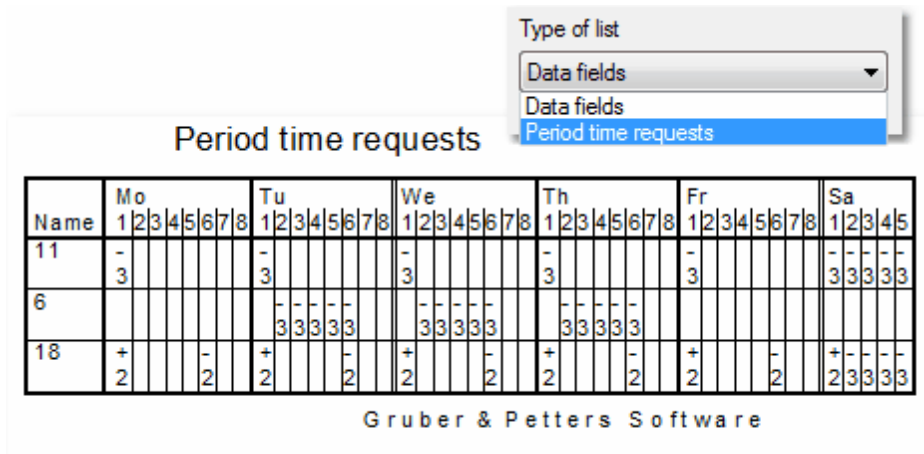
www.untis.dk

Andet arbejde - Ø-tid

Denne funktion anvendes kun i forbindelse med modulet [Fagfordeling og Tjenestetidsberegning](#) .

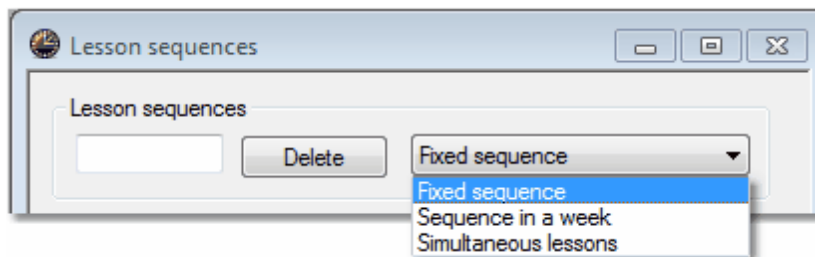
Timeønsker

'Vis udskrift'-dialogen giver dig også mulighed for at udskrive timeønsker for den enkelte undervisning.



2.7 Lesson sequences

You can use the lesson sequence function, called via 'Lessons | Lesson sequences', to influence how lessons are scheduled. There are three different types of lesson sequence:



- [Fixed \(subject\) sequences](#)
- [Simultaneous lessons](#)
- [Sequence in a week](#)

2.7.1 Fixed (subject) sequence

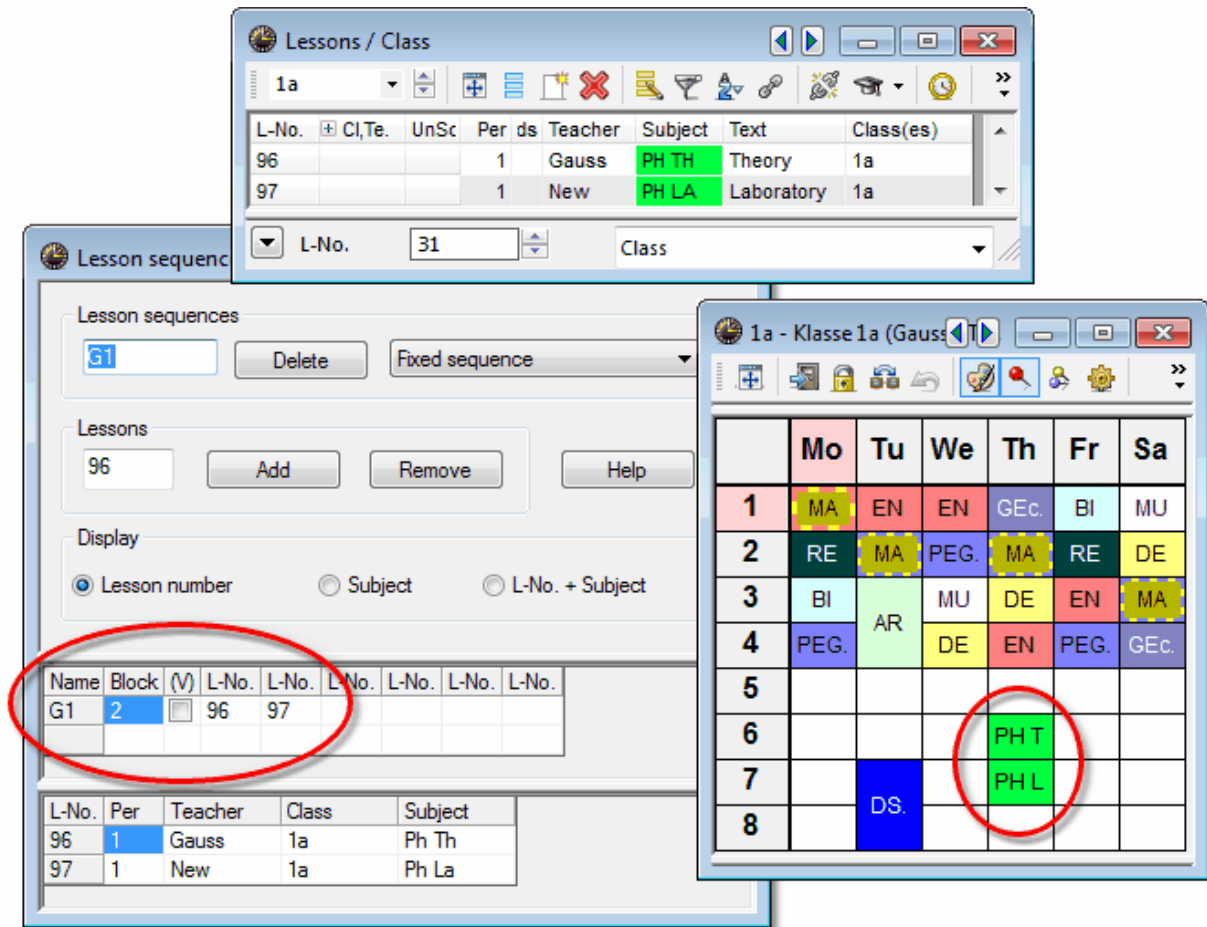
3 Use the fixed subject sequence to specify the periods that must be scheduled in sequence.

Access '[Lessons|Lesson sequences](#)', set the drop-down list at the top right to *Fixed sequence* and enter the lessons that are to be scheduled in sequence.

Example

The physics theory lesson for class 1a, lesson 96, should immediately precede practical physics,

lesson 97. Once the subject sequence has been specified, Untis will now schedule the periods to take place sequentially.



Note: Entering with double-click
 Lesson numbers for lesson sequences can also be entered by double-clicking on the lesson number in question (in the 1st column of the lessons view).

Variable fixed (subject) sequence

In the case of a variable fixed subject sequence, the lessons still follow on from each other but their sequence is variable. In the above example, Untis would be able to choose whether to schedule the theory or practical (lab) lesson first.

Name	Block	(V)	L-No.	L-No.
G1	2	<input checked="" type="checkbox"/>	96	97

2.7.2 Sequence in a week

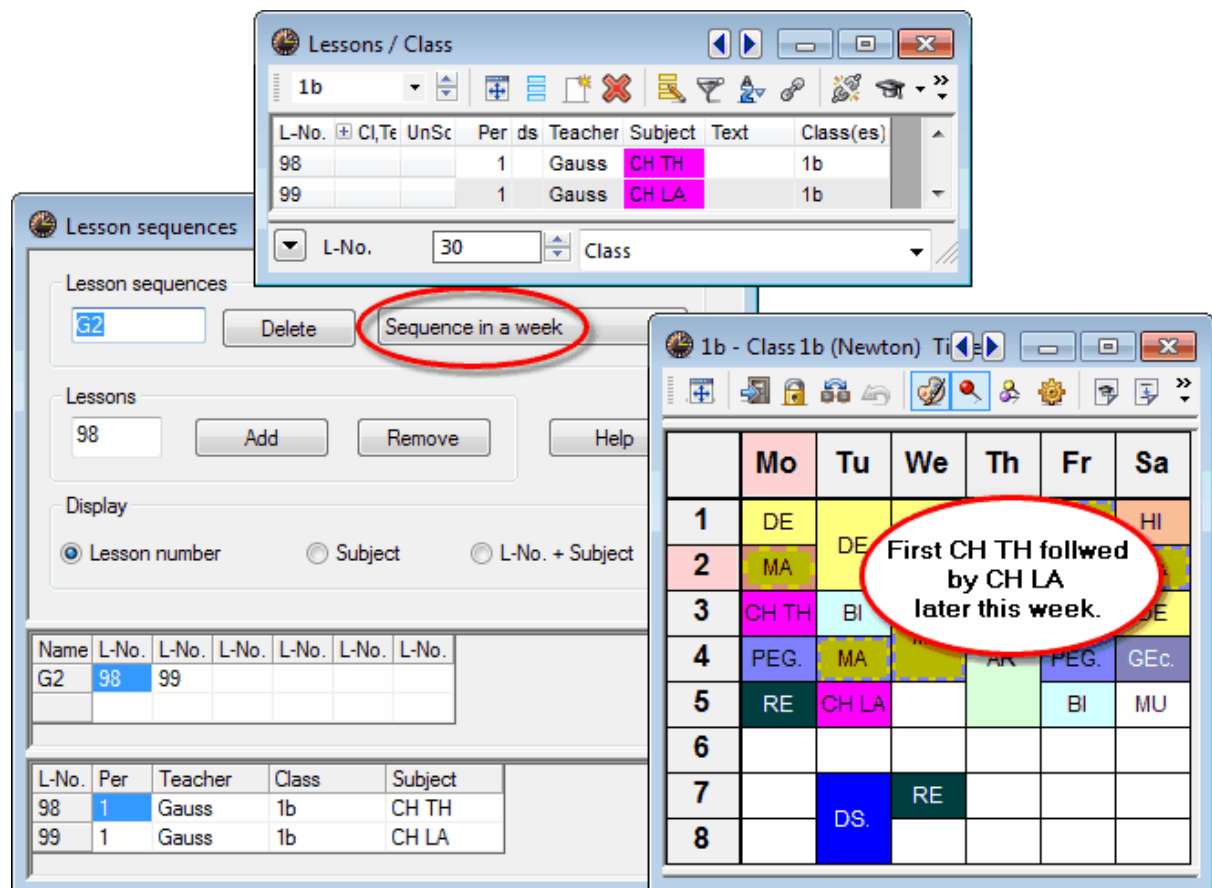
The week sequence allows you to specify the order of class lessons during the week. This function is designed for use with lessons with one or two periods per week.

Access ' [Lessons|Lesson sequences](#) ', set the drop-down list at the top right to *Sequence in a week* and enter the lessons that are to be scheduled in sequence.

Example

The chemistry theory lesson for class 1b is to be scheduled, with the chemistry lab lesson following sometime later in the week.

If a sequence is now entered for the week as shown in the example, Untis will schedule lesson 98 before lesson 99.



A maximum of 3 lesson numbers are possible in the week sequence.

2.7.3 Simultaneous lessons

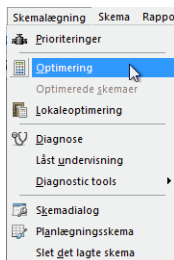
In certain circumstances, for example in combination with the course scheduling module, it may be desirable but not essential to schedule different lessons at the same time. You can define this condition here.

Access ' [Lessons|Lesson sequences](#) ', set the drop-down list at the top right to *Simultaneous lessons* and enter the lessons that are to be scheduled in sequence.

The difference between simultaneous lessons and [coupled lessons](#) is that the optimisation tool is permitted to split simultaneous lessons. Coupled lessons, on the other hand, can never be split.

3 Optimering

3.1 Timetable optimisation



The following chapter describes the timetable optimisation function and the diagnosis tools used before and after an optimisation run.

The optimisation tool of the Untis timetabling software manages the entire automated process of constructing a timetable. It consists of two main elements – the *placement run* and the *swap run* .

The programme starts with an empty time grid and proceeds to fill the grid with periods. Since this alone would not necessarily produce the best results, the constructed timetable then undergoes a series of specific period swaps to improve the final outcome. In the end, the weighting settings you have specified will determine the actual quality of the timetable.

An apt comparison is the board game Nine Men's Morris where two players place individual pieces on an empty board before attempting to improve their positions by strategically moving the pieces across the board.

Of course, the placements and swaps initiated by the programme are not done at random. Each violation of one of the specifications you have entered (e.g. the maximum number of periods per day) incurs a penalty point. With the help of the weighting settings, the software proceeds to re-evaluate the penalty points until it arrives at a value for the entire timetable. This value gives you an indication of how good the timetable really is. The lower the value, the higher the level of compliance with the given settings and the better the overall quality of the completed timetable.

3.2 Weighting

The weighting function forms the basis of the automated timetable optimisation tool. Untis offers 6 levels of importance ranging from "Unimportant" (0) to "Extremely important" (5) which allow you to specify the level of priority given to the individual settings.

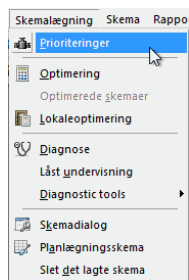
Hint!

Some weighting points only become effective after specific data has been entered in the master data or lesson window (see the chapter "Data input"). Other weightings, by contrast, are data independent and affect every optimisation run.

The function "Respect the maximum and minimum number of periods per day for teachers", for instance, is a dependent weighting point since it depends on data entered under "Periods day Min, Max" on the "Timetable" tab under "Master Data | Teachers" (e.g. "2, 4"). The weighting determines the level of importance of these settings (i.e. the degree of compliance with the settings). Leaving the field empty means that the weighting has no effect on the optimisation process.

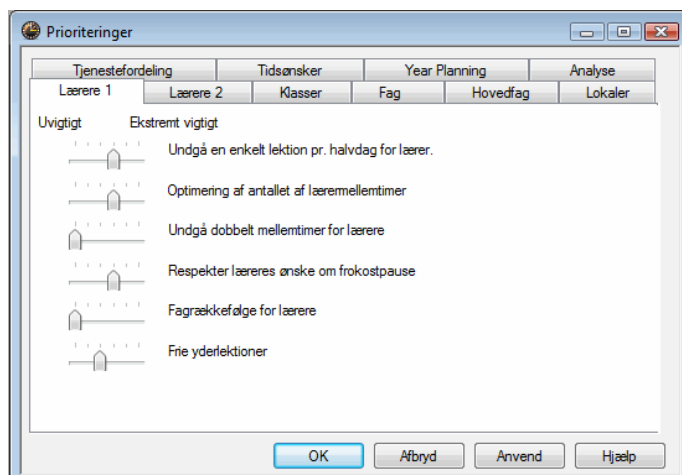
Independent weighting points, by contrast, involve general settings such as "Avoid non-teaching periods (NTPs)" or "Avoid having just one period in a half-day for teachers" since window periods and single periods do not require additional specifications to be entered under master data or lessons.

The weighting settings can be accessed via the menu item "Scheduling | Weighting".



The weighting dialogue contains the different weighting parameters sorted by topic and organized on a number of different tabs. Increase or decrease individual weighting settings by using the slider provided. From left to right, the weighting sliders offer 6 different levels of importance:

- Position 0 - unimportant
- Position 1 - not very important
- Position 2 - fairly important
- Position 3 - important
- Position 4 - very important
- Position 5 - extremely important

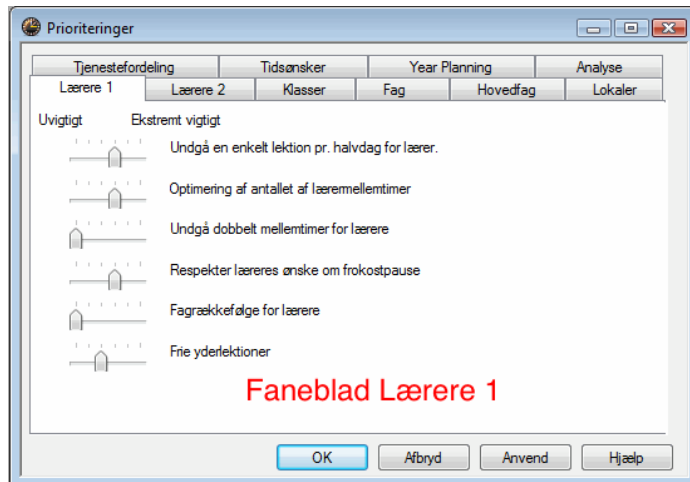


The following chapter briefly describes the individual parameters with reference to the master data and lesson data settings relevant for dependent weighting points.

3.2.1 The weighting parameters

The weighting parameters are topic-based and can be modified on the appropriate tab.

3.2.1.1 The "Teachers (1)" tab



Avoid having just one period in a half-day for teachers

- When a teacher has lessons on a half-day, a high weighting ensures that the teacher will teach more than a single period.

Optimisation of NTPs for teachers

- Under "Master Data | Teachers", you have entered values for maximum and minimum numbers of NTP's (Non Teaching Periods). Use this slide to control the level of compliance with the specified settings.

Avoid creating double NTPs for teachers

- In addition to controlling single NTPs, you can give penalty points for each double NTP scheduled by the software during optimisation.

Respect lunch break for teachers

- Applies to the settings entered for minimum/maximum length of lunch break for teachers under "Master Data | Teachers".

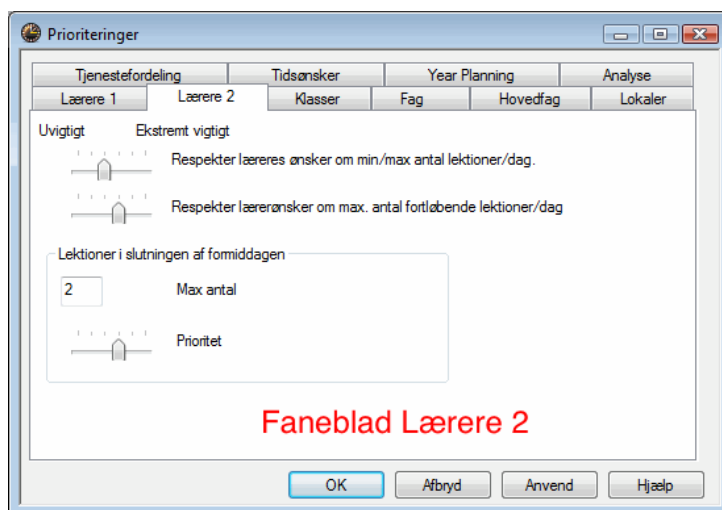
Respect subject sequence - teachers

- Controls the level of importance of the subject sequence codes entered under "Lesson | Teachers" or "Master Data | Subjects". For further details, please see the chapter "Subject sequences".

Respect breaks at beginning and end of day

- Controls the level of importance of breaks between days entered on the "Timetable" tab under "Master Data | Teachers". For further details on breaks between days, please see the chapter "Master data properties".

3.2.1.2 The "Teachers (2)" tab



Respect the maximum and minimum number of periods per day for teachers

- Controls the level of compliance with the values entered under "Master Data | Teachers" for maximum / minimum number of periods per day for teachers.

Respect the maximum number of consecutive periods per day

- Controls the level of compliance with the values entered under "Master Data | Teachers" for maximum number of periods per day in sequence.

Input block "Periods in last morning slot"

Maximum

Teachers scheduled to have lessons on the last period of the morning are often at a disadvantage. You can therefore specify the maximum number of last morning periods each teacher should teach.

Weighting

Indicates the level of compliance to this rule.

On the "Timetable" tab under "Master Data | Teachers", the weighting for NTPs, lunch break, maximum number of periods per day and maximum periods in sequence for individual teachers can be increased further (to "Very important").

Meget vigtigt

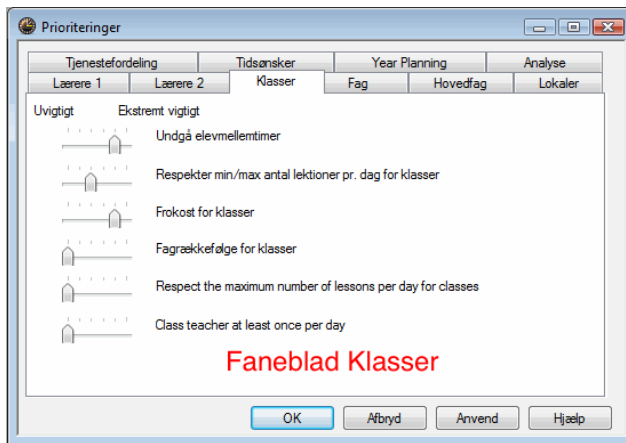
Ikke mellemtimer (A)

Frokost (B)

Max lekt./dag (C)

Max lekt. i følge (D)

3.2.1.3 The "Classes" tab



Avoid non-teaching periods (NTPs)

- Controls the avoidance of NTPs for classes.

Respect maximum or minimum number of periods/day for classes

- Controls the level of compliance with the values entered under "Master Data | Classes".

Respect lunch break requests for classes

- Controls the level of compliance with the values entered under "Master Data | Classes" for minimum / maximum length of lunch break.

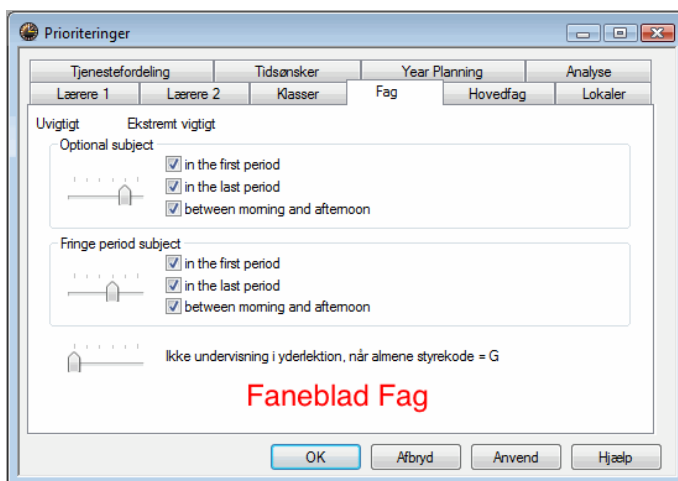
Respect class sequence - Classes

- Controls the level of compliance with the subject sequence codes specified under "Lesson | Classes" or "Master Data | Subjects".

Respect the maximum number of lessons per day for classes

- Controls the level of compliance with the values entered under "Master Data | Classes" for "Max. different less./day".

3.2.1.4 The "Subjects" tab



Use the following weighting settings to control the level of compliance with the specifications entered for fringe periods and optional subjects. These subjects are defined on the "Subject" tab under "Master Data | Subjects" (code "(F) Fringe period" or "(O) Optional subject").

Fringe periods and optional subjects are usually lessons not attended by all the students of a class. To avoid NTPs for the rest of the students, these subjects should preferentially be scheduled at the beginning or the end of a half-day.

Code (G) "Not a fringe period" has the opposite effect. A subject marked (G) should preferentially be scheduled in the middle of a half-day.

Optional subjects only in the last period of the half days

- Controls the scheduling of subjects marked "Optional subject" in the last periods of a half-day.

Opt. subjects in the 1st or last period of the half days

- Controls the scheduling of subjects marked "Optional subject" in the first or last periods of a half-day.

Fringe periods in the last period of the half days

- Controls the scheduling of subjects marked "Fringe period" in the last periods of a half-day.

Fringe periods in the 1st of last period of the half days

- Controls the scheduling of subjects marked "Fringe period" in the first or last periods of a half-day.

Lesson not to be held in fringe period is code = G

- Controls the scheduling of subjects marked (G) in the middle periods of a half-day.

The only differences between optional subjects and fringe period subjects are the different weighting settings specified by the timetabler.

For instance, if you have two subjects – Choir and Clarinet – both of which are attended by some of the students of the class. The subject Choir can take place either at the beginning or the end of a half-day, but you want the subject Clarinet to take place exclusively at the end of the day.

Meet both requirements by entering the code (O) for Choir and the code (F) for Clarinet and set the weightings accordingly.

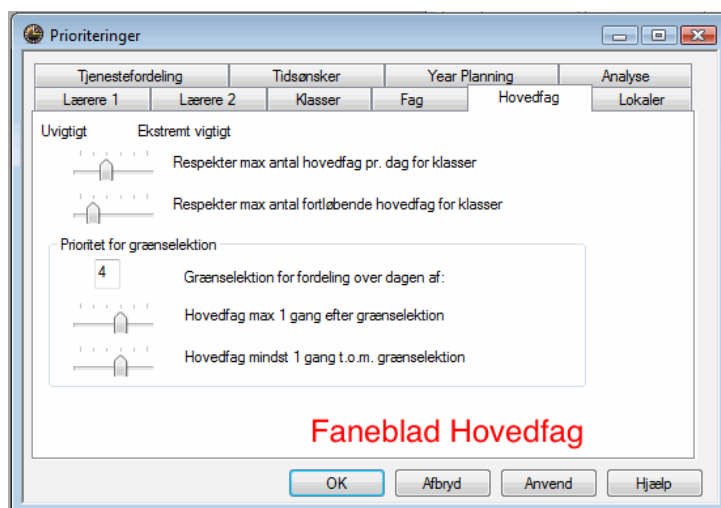
If you want the subject Choir to be scheduled exclusively at the beginning of a half-day, simply block the last periods of the halfday by entering the time request -3 (under "Master Data | Subjects").



Hint!

You can also control the scheduling of fringe period subjects and optional subjects exclusively via the time request function. However, the optimisation tool will profit from a higher degree of flexibility when working with weighting settings rather than time requests.

3.2.1.5 The "Main Subjects" tab



Main subjects can be defined under "Master Data | Subjects".

Respect maximum number of main subjects per day for classes

- Controls the level of compliance with the specification "Maximum number of main subjects per day" entered on the "Timetable" tab or in the grid view under "Master Data | Classes".

Respect max. no. of consecutive main subject periods for classes

On the "Timetable" tab or in the grid view under "Master Data | Classes", you can specify the number of main subjects that may be scheduled in sequence for a class. This weighting controls the level of importance of the settings.

Input block "Boundary period for the following aspects"

Boundary period for the following aspects

Use this input field to specify a boundary period.

Main subjects max. once after boundary period

Controls the level of importance for the above specification (per week).

Main subject at least once up to boundary period

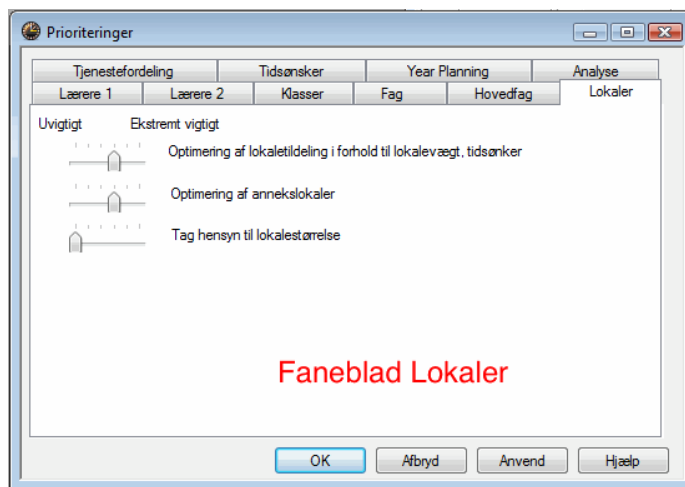
Controls the level of importance for the above specification (including the boundary period) per week.

The difference between the two weighting settings depends on what happens after the boundary period. The task of the first weighting is clear – a main subject must not be scheduled more than once per week after the boundary period. The meaning of the second weighting, by contrast, is not as obvious. Choosing a high priority means that the main subject can be scheduled after a boundary period *as often as necessary* as long as it is scheduled *at least once before* the boundary period.

Let us assume you have defined period 5 as your boundary period. Now you want to schedule 4 periods of English (a main subject). If the software has already scheduled one period of English for Monday, period 6, a high weighting for "Main subjects max. once after boundary period" ensures that the other three periods are scheduled before or in period 5.

A high weighting for "Main subject at least once up to boundary period", by contrast, would ensure that English could be scheduled after period 5 on two other school days as long as it is scheduled at least once before or in period 5.

3.2.1.6 The "Rooms" tab



Optimisation of room allocation

Use the "Room weighting" tab under "Master Data | Rooms" to assign a value between 0 and 4 to each room in the school. 0 indicates that the room is non-essential for the lesson allocated to it, i.e. it is unimportant if a lesson takes place in this room or in an alternative room (for instance because the lesson requires no special fixed teaching aids). 4 indicates a high priority, i.e. a lesson should be scheduled in this room (or its designated alternative room), if at all possible.

A Chemistry lesson where a number of experiments will be performed should only take place in the Chemistry lab. A PE lesson only makes sense when the sports hall is available.

Caution!

If the weighting slider is set to 5 (extremely important) or 4 (very important) and if, in addition, the room weighting of the subject room is set to 4, the lesson will not be scheduled unless a suitable subject room can be found.

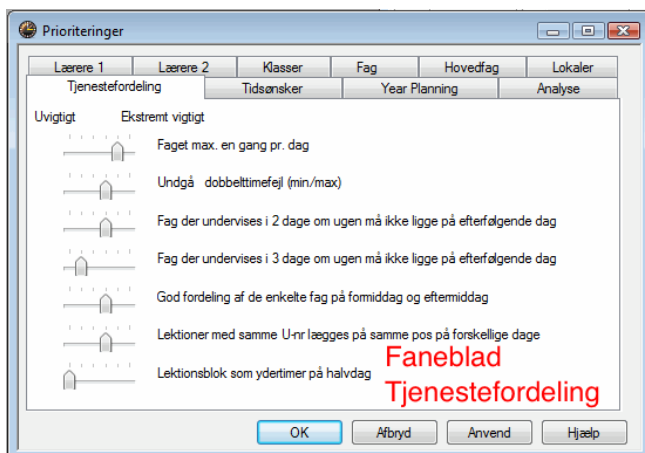
Optimisation of the off-site rooms

- Controls the level of compliance with the specified walking times required to reach off-site buildings (external sites). Please see the chapter "Off-site rooms" for further details.

Take room capacity into consideration

As a rule, the optimisation tool and the room optimisation function attempt to allocate a room with a room capacity appropriate for the number of students in the class. If this presents a problem, the programme searches for a room that is slightly larger than required. In extreme cases, the software may allocate a room that is slightly smaller than required.

3.2.1.7 The "Period Distribution" tab



The same subject cannot be taught more than once on the same day

Specifies that a subject must not be scheduled more than once a day for a class (even if the subject is involved in a number of different coupled lessons).

Avoid errors with double periods

Untis identifies two types of double period errors: the splitting of desired double periods and the "accidental" emergence of undesirable double periods when the same subject is scheduled for consecutive periods. Of the two errors, the optimisation tool assigns a higher priority to the preservation of desired double periods.

This weighting is connected with codes "(2) More than once a day" and "(D) Respect double periods". You can find these settings in the master data and the lesson window. The two codes are mutually exclusive.

Code (2) causes the weighting for "Avoid errors with double periods" to be set to 0 (unimportant), while code (D) increases the importance of the weighting. This increase in importance can result in a situation where a lesson will not be scheduled because the software cannot comply with the double period condition.

When you set the weighting for "Avoid errors double periods" to 5 (extremely important), the optimisation tool rates the importance of the double period condition very high right from the very beginning of the optimisation run and even increases the importance during the run so that at the end of the optimisation process, all lessons are treated automatically as if the lessons had been coded "(D) Respect double periods".

Caution!

*activate code (D) **only in exceptional cases or not at all** . Excessive use leads to a deterioration of the optimisation results .*

2 periods/week - subjects not on consecutive days

This weighting applies to lessons with 2 periods per week (no double period) and is designed to ensure that the two periods are evenly spread throughout the week. A high weighting prevents the software from scheduling the two lessons on consecutive days or from scheduling one lesson on the last week day and the other on the first week day.

3 periods/week - subjects not on consecutive days

This weighting applies in the same way as the previous one, but for 3 periods per week.

Even distribution of periods of a subject across the day

A high weighting ensures that a subject scheduled for Monday, period 3, is scheduled for a different period on subsequent days of the week, i.e. not period 3. The following weighting point has the opposite effect.

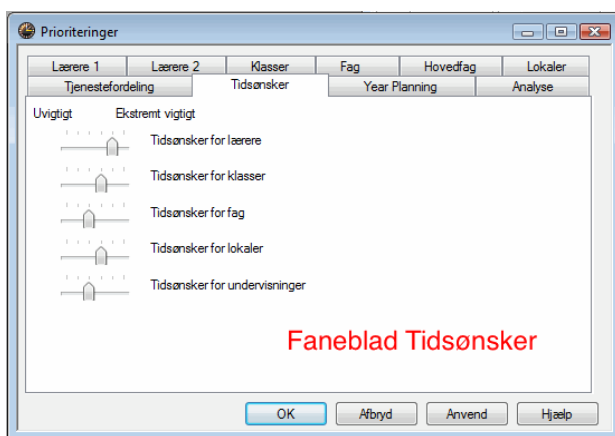
Try to place the same lesson at the same time on different days

A high weighting ensures that a subject scheduled for Monday, period 3, is also scheduled for period 3 on other days of the week. The previous weighting point has the opposite effect.

Large blocks in fringe periods on half-days

For a variety of reasons, it is often desirable to schedule block lessons at the beginning or end of a half-day. A half-day consisting of 6 periods can therefore accommodate 2 blocks of 3 periods each. Since block lessons are often slightly shorter than the sum of the single periods (for instance, because there are no breaks between periods), students will be able to leave school early or start school later than the normal start time.

3.2.1.8 The "Time Requests" tab



Time requests can be entered via themaster data or the lesson window by clicking on the button <Time Requests>. For further details, please see the chapter "Time requests".

Time requests for teachers

- Controls the compliance with time requests entered under "Master Data | Teachers".



Time requests for classes

- Controls the compliance with time requests entered under "Master Data | Classes".

Time requests for subjects

- Controls the compliance with time requests entered under "Master Data | Subjects".

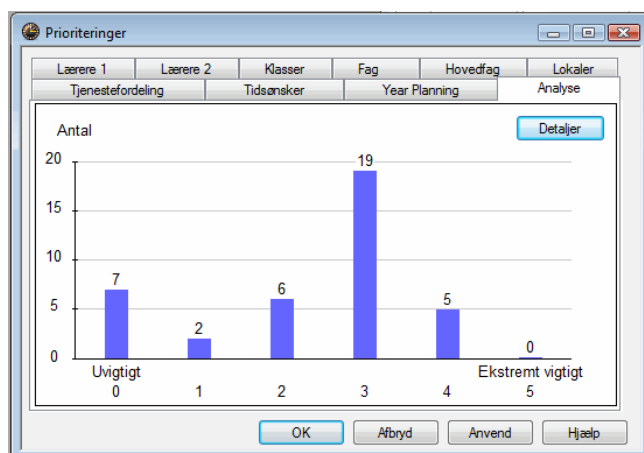
Time requests for rooms

- Controls the compliance with time requests entered under "Master Data | Rooms".

Time requests for lesson periods

- Controls the compliance with time requests entered in the lesson window.

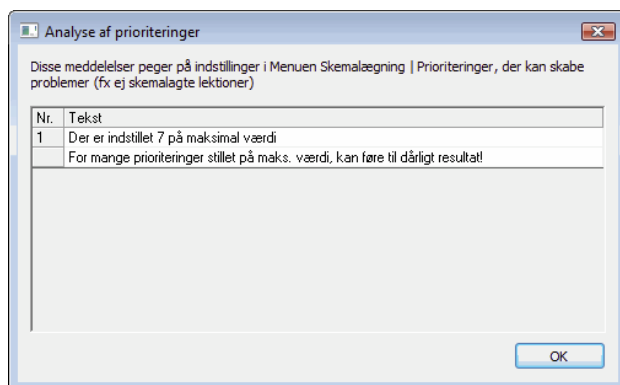
3.2.1.9 The "Analysis" tab



A well-balanced distribution of the weighting is the prerequisite for a good optimisation result. The "Analysis" tab offers an overview of the frequency of the different weighting levels.

In our example about six weighting parameters are set to the highest weighting level 5 (extremely important).

You can get more information about possible problems because of the distribution of the weighting by clicking on the button <Details>.



3.2.2 General notes

If you have not worked with the weighting parameters before, we would suggest you proceed as follows:

First, familiarise yourself with all the weighting parameters and their functions.

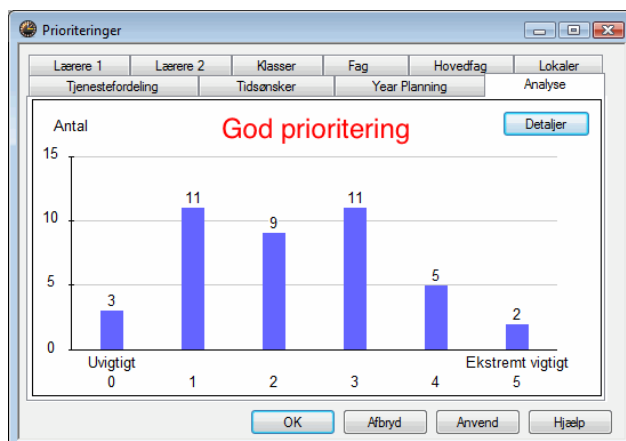
Then, move the sliders for all the attributes that **do not apply to your school under any circumstances** to the very left (position 0 = unimportant), for instance, for "Optimisation of the off-site rooms" if your school has no off-site rooms.

Hint!

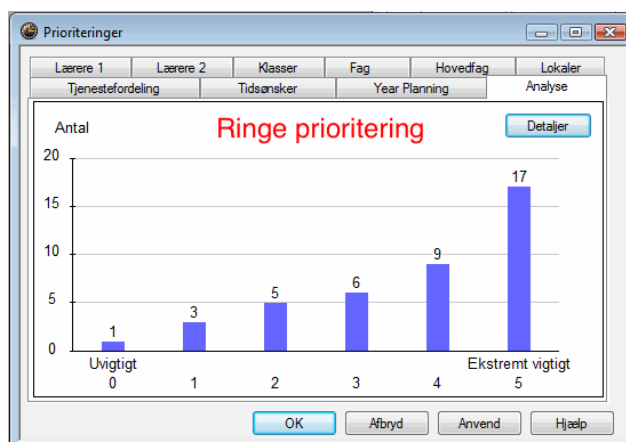
If in doubt about the relative importance of an attribute, set the slider to position 1 (not very important) instead of 0.

Next, adjust the remaining sliders in order of increasing importance from "not very important" to "extremely important".

Watch the frequency with which you assign the different levels of importance. As a general rule, it is desirable to assign the weighting settings between 1 (not very important) and 5 (extremely important) in roughly equal numbers, or in decreasing frequency as the level of importance increases. Please see the example shown in the two graphs (the x axis shows the 6 weighting levels, the y axis shows the relative frequency of each weighting).



You should never end up with a distribution where a disproportionately large number of weightings are set to 0 or 1 (unimportant/not very important) or to 5 (extremely important). Another undesirable situation is a frequency that increases with increasing weighting importance.



Caution

The difference between the weighting level 4 and 5 is much higher than between 3 and 4. If you have selected too many settings of "extremely important", the optimisation tool will be restricted to the extent that it can only schedule a fraction of the periods. Hence, set levers on level 5 only if it is absolutely necessary.

The construction of a good timetable is not a matter of frequently selecting the highest weighting, but of

accurately representing the different conditions at your school.

3.3 Analysis of input data

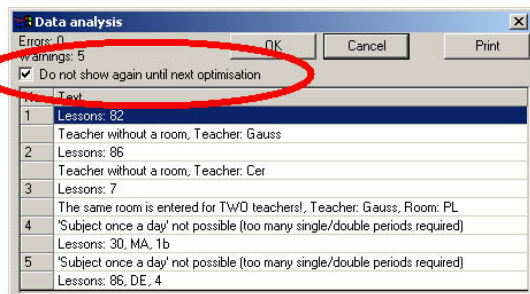
Before starting the actual optimisation run, it is useful to check your data for errors and possible problems.

3.3.1 Data analysis

The data analysis can be activated in three different ways.

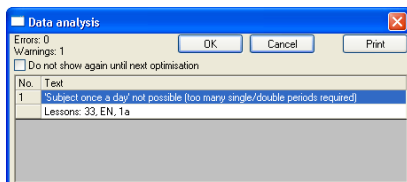
1. Automatically at the start of an optimisation run (e.g. via the optimisation dialogue or the scheduling dialogue);
2. Automatically when opening a saved file;
3. Via „Scheduling | Diagnosis“ (see the chapter "Diagnostics tools" below).

Option 2 above can be deactivated by ticking the box „Do not show again until next optimisation“. The next analysis will only be carried out during the next optimisation run, but can then also be suppressed, if necessary.



The data analysis tool checks your input data for consistency, highlights errors and draws your attention to potential problems. Messages referring to actual errors are highlighted in red. When actual errors are identified, it will not be possible to start the optimisation until the errors are resolved.

All problems listed in the data analysis can be found in the diagnosis, too. By clicking on the button <Open the diagnosis> you have the possibility to access a complete list of all problems in your set of data.



Hint!

We would strongly advise you to act on the messages displayed by the data analysis tool since the identified problems could seriously reduce the effectiveness of the optimisation tool.

3.3.2 CCC-Analysis

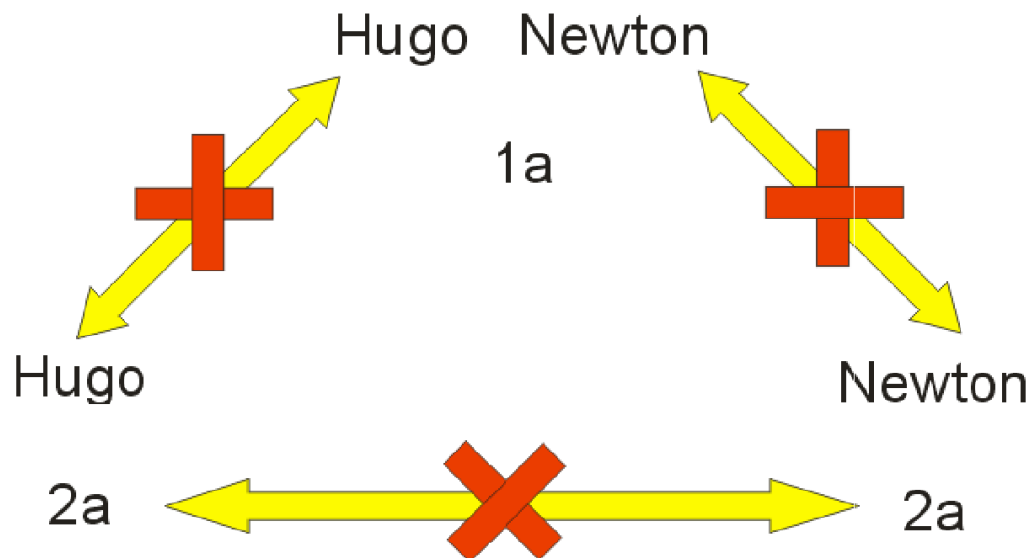
In order to obtain a good timetable, it is important to locate possible bottlenecks that might cause an obstruction for the scheduling tool, and to eliminate these **before the optimisation**.

Such bottlenecks occur in the form of Critical-Conflict-Chains (CCC). These are defined as groups of lessons that cannot be scheduled at the same time due to a conflict between classes and/or coupled teachers.

The CCC analysis locates the longest chains in your lesson input data and identifies the coupled teacher at the heart of the obstruction. Replacing this teacher will often result in a shortening of the chain, permitting the scheduling of all periods.

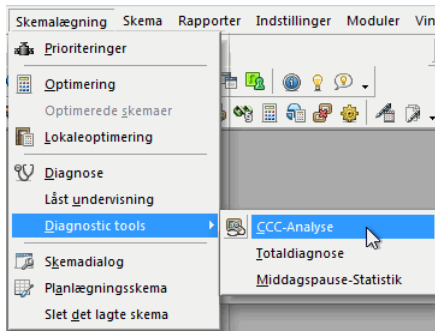
If, for example, teacher Hugo is assigned to teach English (lesson 1) to class 1a and French (lesson 2) to class 2a, these two lessons cannot be scheduled at the same time. If lesson 1 (English, 1a) involves a coupled teacher (e.g. Newton) who is also assigned to teach Physics to class 2a, the number of lessons in this chain increases to three.

This means that whenever teacher Hugo teaches English to class 1a, two further lessons are automatically blocked (see diagram on the following page). Furthermore, Newton, who teaches Physics to class 2a, would also block the other two lessons since Hugo could not teach French to the same class at the same time, and Newton could not teach English to class 1a at the same time.



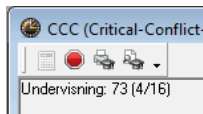
The total number of periods per week involved in a chain is a measure of how difficult it is for the software to schedule the lessons in the chain. It is easy to see, for instance, that a large number of different teacher teams will mean a rapid increase in the total number of periods in the chain. If this number is greater than the number of periods available in the time grid, it is mathematically impossible to schedule all the lessons in this chain.

The task of the CCC analysis is to locate the longest conflict chains. Start the analysis by accessing the menu item "Scheduling | CCCAnalysis". The CCC window appears and the CCC analysis starts automatically. The analysis can take up to several minutes, depending on the size of your school.



3.3.2.1 Information during the analysis

During the analysis, you will see the number of the lesson currently being analyzed, i.e. scanned for its dependency on other lessons, in the upper part of the window (on the right hand side of the word "Lesson"). The two numbers in brackets denote the number of couplings the software has finished analyzing and the total number of couplings to be analyzed, respectively.



In addition, the information field "Investigated variations" displays the number of combinations the software has finished analyzing.



3.3.2.2 Control of the analysis

You can cancel the data analysis at any time by clicking on <Cancel>.



Start a new CCC analysis by clicking on <Start analysis>.



The following example shows how to use the CCC analysis function:

1. Open the file demo2.gpn and start the CCC analysis via the menu item "Scheduling".

When the analysis is finished, the CCC window appears as shown in the figure below (there may be slight variations, depending on which version of the Untis timetabling software you are using).

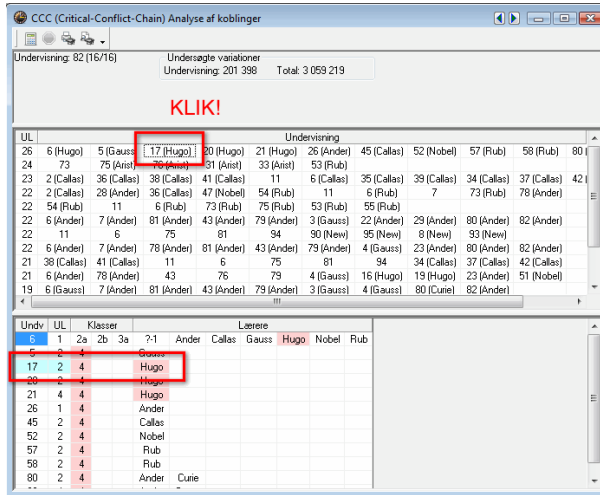
3.3.2.3 The CCC window

As you can see in the upper part of the window, there are 86 lessons and 15 couplings, resulting in over 2.8 million combinations that need to be analyzed.

The middle part of the window

The middle part of the window shows a table of all CCCs listed in rows. The first column contains the total number of periods per week involved in each chain. The figures on the right are the lesson numbers

of the lessons involved in the chains. The table also displays the abbreviated names of teachers in brackets next to some of the elements. The purpose of this function is described in a later chapter.
 2. Click on "8 (New)" in the first row of the middle part of the window (see figure).



The CCC details window

The bottom part of the window - *the details window* – displays the details of the lesson selected in the middle part of the window. The example shows that the cells for lesson numbers and the number of periods per week are now shaded light blue. Several other cells are now shaded red.

Undv	UL	Klasser	Lærere
6	1	2a 2b 3a	?-1 Ander Callas Gauss Hugo Nobel Rub
5	2	4	Gauss
17	2	4	Hugo
20	2	4	Hugo
21	4	4	Hugo
26	1	4	Ander
45	2	4	Callas
52	2	4	Nobel
57	2	4	Rub
58	2	4	Rub
80	2	4	Ander Curie
82	4	4	Ander Gauss

The details window now displays the following information: the elements involved in lesson 8 with a total of 2 periods per week are the class 2b and the teacher Newton (abbreviated name "New").

Lesson 6 with one period per week, by contrast, involves several classes (2a, 2b, 3a, 3b and 4) and teacher Callas.

Some lessons such as lesson 74 (3 periods per week) may only involve one class (here class 4), but several teachers (Curie and Newton).

The cells shaded red highlight the reason why the displayed lesson cannot be scheduled at the same time as the lesson selected in the middle part of the window. Lesson 6, for instance, cannot be scheduled at the same time as lesson 8 since both lessons involve the class 2b. Lesson 10, by contrast, involves a different class, but the same teacher (Newton), and therefore cannot be scheduled at the same time as lesson 8, either.

3.3.2.4 Shortening CCCs

The longest chain – the first row in the middle part of the window – contains 27 periods that cannot be scheduled at the same time since this would lead to conflicts, as described above. If you consider that

there may be time requests defined for each teacher, class and lesson, that each lesson may have additional conditions imposed on it (e.g. main subjects should not be scheduled too late in the day), that rooms are not always available, and that all this applies equally to the elements of all the other chains (the second longest still has a total number of 24 involved lessons).

Hint!

A large number of chains with many periods can be the cause of a serious timetabling bottleneck.

You now have the option of shortening the chain by assigning a different teacher to individual lessons.

Please note that swapping teachers may not necessarily result in a shortening of the chain. In the worst case scenario, it may even result in a lengthening of the chain.



A lengthening of the chain can occur when a re-assigned teacher is a member of a different teacher team that is not yet part of the chain. When two (or more) teacher teams end up sharing a teacher after a swap, the increased number of teacher teams means there is a high probability that the teachers will block each other.

3.3.2.4.1 List of teacher teams

Display or print the list of teacher teams (by clicking on the corresponding buttons in the CCC analysis window) to have a handy reference of the composition of the teacher teams at your school.



3.3.2.4.2 Critical element

The teacher whose swap would cause the greatest shortening of the chain is referred to as the *critical element*. The CCC analysis displays the abbreviated name of that teacher in the middle part of the window in brackets beside the lesson number.

If no critical element is displayed, the teachers for this lesson should not be swapped. See the given example where teacher Callas is assigned to teach lesson 6. Since four different classes are involved in this lesson, it is highly unlikely that a teacher swap would result in a shortening of the chain.

UL	Undervisning											
26	6 (Hugo)	5 (Gauss)	17 (Hugo)	20 (Hugo)	21 (Hugo)	26 (Ander)	45 (Callas)	52 (Nobel)	57 (Rub)	58 (Rub)	80 (Ander)	82
24	73	75 (Arist)	76 (Arist)	31 (Arist)	33 (Arist)	53 (Rub)						
23	2 (Callas)	36 (Callas)	38 (Callas)	41 (Callas)	11	6 (Callas)	35 (Callas)	39 (Callas)	34 (Callas)	37 (Callas)	42 (Callas)	
22	2 (Callas)	28 (Ander)	36 (Callas)	47 (Nobel)	54 (Rub)	11	6 (Rub)	7	73 (Rub)	78 (Ander)		
22	54 (Rub)	11	6 (Rub)	73 (Rub)	75 (Rub)	53 (Rub)	55 (Rub)					
22	6 (Ander)	7 (Ander)	81 (Ander)	43 (Ander)	79 (Ander)	3 (Gauss)	22 (Ander)	29 (Ander)	80 (Ander)	82 (Ander)		
22	11	6	75	81	94	90 (New)	95 (New)	8 (New)	93 (New)			
22	6 (Ander)	7 (Ander)	78 (Ander)	81 (Ander)	43 (Ander)	73 (Ander)	4 (Gauss)	23 (Ander)	80 (Ander)	82 (Ander)		
21	38 (Callas)	41 (Callas)	11	6	75	81	94	34 (Callas)	37 (Callas)	42 (Callas)		
21	6 (Ander)	78 (Ander)	43	76	79	4 (Gauss)	16 (Hugo)	19 (Hugo)	23 (Ander)	51 (Nobel)		
19	6 (Gauss)	7 (Ander)	81 (Ander)	43 (Ander)	79 (Ander)	3 (Gauss)	4 (Gauss)	80 (Cune)	82 (Ander)			

Take a look at the periods per week: In the longest chain (first row in the middle part of the window), the lesson with the most periods per week is lesson 93 with teacher Newton (5 periods per week). Replacing Newton with another teacher could result in the shortening of this chain by 5 periods per week. Since the couplings all affect each other, however, the chain could be shortened by less than that.

Undv	UL	Klasser			Lærere						
6	1	2a	2b	3a	?-1	Ander	Callas	Gauss	Hugo	Nobel	Rub
5	2	4					Gauss				
17	2	4					Hugo				
20	2	4					Hugo				
21	4	4					Hugo				
26	1	4					Ander				
45	2	4					Callas				
52	2	4					Nobel				
57	2	4					Rub				
58	2	4					Rub				
80	2	4					Ander	Curie			
82	4	4					Ander	Gauss			

Lesson 93 is Maths and another suitable teacher would be Aristotle.

3. In lesson 93, replace teacher Newton ("New") with Aristotle ("Arist").
4. Carry out a new CCC analysis.

Now the longest chain is the one with 24 periods (previously the second longest). The previously longest chain now only contains 22 periods. Lesson 93 is no longer a part of this chain.

UL	Undervisning											
26	6 (Hugo)	5 (Gauss)	17 (Hugo)	20 (Hugo)	21 (Hugo)	26 (Ander)	45 (Callas)	52 (Nobel)	57 (Rub)	58 (Rub)	80 (Ander)	82
24	73	75 (Arist)	76 (Arist)	31 (Arist)	33 (Arist)	53 (Rub)						
23	2 (Callas)	36 (Callas)	38 (Callas)	41 (Callas)	11	6 (Callas)	35 (Callas)	39 (Callas)	34 (Callas)	37 (Callas)	42 (Callas)	
22	2 (Callas)	28 (Ander)	36 (Callas)	47 (Nobel)	54 (Rub)	11	6 (Rub)	7	73 (Rub)	78 (Ander)		
22	54 (Rub)	11	6 (Rub)	73 (Rub)	75 (Rub)	53 (Rub)	55 (Rub)					
22	6 (Ander)	7 (Ander)	81 (Ander)	43 (Ander)	79 (Ander)	3 (Gauss)	22 (Ander)	29 (Ander)	80 (Ander)	82 (Ander)		
22	11	6	75	81	94	90 (New)	95 (New)	8 (New)	93 (New)			
22	6 (Ander)	7 (Ander)	78 (Ander)	81 (Ander)	43 (Ander)	79 (Ander)	4 (Gauss)	23 (Ander)	80 (Ander)	82 (Ander)		

When the CCC analysis identifies many CCCs with lessons with a large number of periods per week (as a rule of thumb, "large" means "greater than or equal to the number of possible morning periods"), you

should investigate the composition of the teacher teams in all the large couplings and, if possible, remove the critical elements (teachers). The same applies when the total number of periods of the longest CCC is too high.

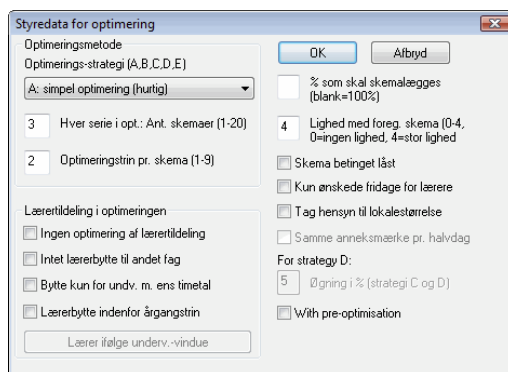
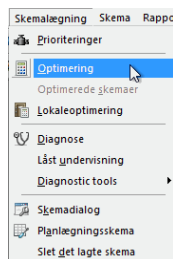
For further details on teacher teams, please see the chapter "Teacher teams".

The additional module Lesson Planning provides an automated teacher swap function. Please see details in the chapter "Optimisation".

3.4 Optimisation

3.4.1 Control data for optimisation

The optimisation dialogue is accessible via the menu item "Scheduling | Optimisation". The following chapter describes the individual input fields in this window.



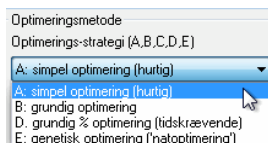
3.4.1.1 Optimisation process

You have a choice of different strategies and optimisation depths.

3.4.1.1.1 Optimisation strategy (A, B, C, D, E)

Untis offers five different strategies for the construction of your timetable. These strategies offer different levels of complexity. Strategy A represents the lowest and Strategy E the highest level of complexity.

As a general rule, the more complex the optimisation strategy, the better the result, but the longer it takes the software to compute the result. The differences between the individual strategies are described in a later chapter.



3.4.1.1.2 Optimisation series: No. of TTs (1-20)

Use this option to specify how many different timetables you want the software to construct per series. Each timetable is saved in a dedicated file (work x .gpn where x is the number of the file) in the active Untis directory (it is advisable, however, to enter a dedicated path for these *work files* on the "Directories" tab under "Settings | Miscellaneous"). Depending on the selected optimisation strategy (see the chapter "Strategies"), the programme will carry out further optimisation runs for the timetables.

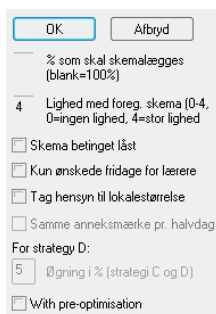
3.4.1.1.3 Optimisation level (1-9)

This function allows you to specify the extent of the software's "pre-calculation function" for each optimisation run. Like a chess game programme, the Untis programme calculates before each "move" (i. e. before each placement of a lesson) how the move will affect the situation as a whole. Depending on the computer, the size of the school and the figure entered for this option, the optimisation of a timetable can take between a few seconds and a few minutes. As a general rule, the longer it takes the computer to arrive at a result, the better the final outcome. In the early stages of a timetable construction, however, long optimisation runs are often counter-productive since initial results often indicate that certain changes need to be made to the input data.

Further input options can be found on the right hand side of the control data window:

3.4.1.1.4 % of periods to be scheduled

Allows you to specify the percentage of periods you want the software to schedule. Leaving the field empty means that the optimisation tool will attempt to schedule all the available periods.



Hint!

The percentage refers to the periods of the entire school. So if you schedule 10% of a total of 1,000 lessons then Untis selects those 100 lessons that are regarded as to be the most difficult ones. This helps you to find out quickly which lessons are hard to schedule.

3.4.1.1.5 Similarity to previous timetable

Allows you to specify if and how much the next timetable should resemble the previously constructed timetable. The input options range from 0 (no similarity) to 4 (great similarity). Of course, the new timetable always reflects the modifications you make in the scheduling dialogue between optimisation runs. Leaving this field empty equals a value of 0 (no similarity).

3.4.1.1.6 Lock timetable conditionally

If you lock the timetable conditionally, the next optimisation run will skip the placement run and only carry out a swap run. This means that the resulting timetable will be very similar to the previous one. This constitutes an even higher level of similarity than the highest similarity setting (4 = great similarity) in the function described above. Use this function when you have carried out manual changes in the scheduling dialogue and want to start another optimisation run. Ticking this option means that your manual changes will be preserved.

When you combine the two previous functions by ticking the box "Lock timetable conditionally" and increasing the percentage under "% of periods to be scheduled", the software proceeds by first locking the previous timetable, then scheduling the remaining periods and finally carrying out a swap optimisation run for all the periods.

3.4.1.1.7 Only requested days off for teachers

Tick this option to instruct the software to schedule only the free days specified under time requests for teachers (and no additional days).

3.4.1.1.8 Consider room capacity

Activate this function to instruct the optimisation tool to compare the specified room capacity with the number of students in a class or lesson and allocate rooms accordingly.

3.4.1.1.9 Off site buildings by the half day

This option is only active if you have entered off-site codes in "Master Data | Rooms". The algorithm tries to avoid that classes and teachers have to move from one site to another during one half-day.

3.4.1.1.10 Percentage increase

This field is relevant only with strategies [C](#) and [D](#). It is discussed in the respective chapters.

3.4.1.2 Teacher assignment during optimisation

When the software encounters bottlenecks during the optimisation run (see also the chapter "CCC analysis"), the programme attempts to bypass them by swapping teachers. If the software finds a suitable teacher and if a swap with this teacher would improve the quality of the timetable, the programme automatically proceeds with the swap during the optimisation run.

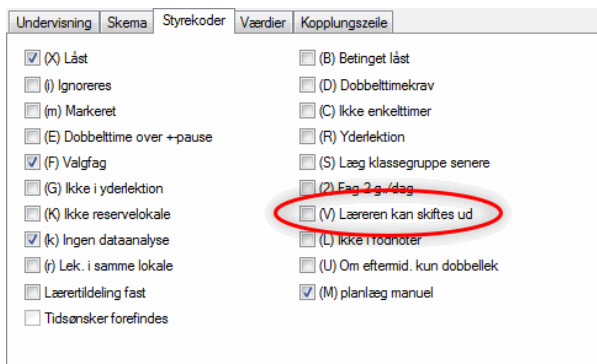
The module *Lesson Planning* offers an extended version of this function.

Automated teacher swaps can only be carried out when at least one of the following two conditions can be met:

- The code "(V) Variable teacher" is active for some lessons;
- The function "? teachers" is active for some lessons (for use with the module *Lesson Planning and Value Calculation*)

3.4.1.2.1 (V) Variable teacher

A teacher may only be swapped if the code "(V) Variable teacher" has been activated. You can find this option on the "[Codes](#)" tab under "Lessons | Teachers". A teacher who is the cause of an optimisation bottleneck and for whom the code (V) is active may be replaced with another teacher.



As a rule, the code (V) applies to *all* the teachers of a lesson. Tick the option „Teacher allocation locked“ in the appropriate row in the lesson details window (under "Lessons | Teachers") if an individual teacher involved in the lesson should not be swapped under any circumstances. This deactivates the code (V) *for this particular teacher* in this coupled lesson (see example below).

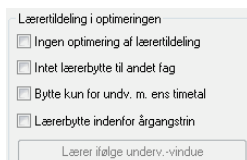
U-nr.	Kla.	Ej sk	UL	Årslek	Lære	Fag	Klass	Faglo	Stami	Lærertidning fast
6	3, 1		1	Ande	Mat	2a,2b	K3a			
7	2, 2		2	Ande	Sle	1a	Sle	K1a		<input checked="" type="checkbox"/>
78	2, 1		1	Ande	Sle	1b,3b	Sle	K1b		
81	2, 2		2	Ande	Sle	2b,2a	Sle	K2a		

3.4.1.2.2 ?-Teacher

For use with the Lesson Planning module. This function enables the software to search for a suitably qualified teacher for the lessons for which this function is active.

U-nr.	Kla.	Ej sk	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltle
11	4, 1		2		Hugi	Geo	1a, 1b, 2a, 2b		K1a	
7	2, 3		2		Gauss	Sle	1b	Sle	K1a	1-1
73	2, 2		3		Arist	IdrP	1a, 1b	Id2	K1a	
78	2, 1		1		?	Sle	1b, 3b	Sle	K1b	
2			3		Callas	For	1b		K1b	

The automated teacher swap function offers the following settings:



3.4.1.2.3 No optimisation of teacher assignment

Ticking this box deactivates the teacher swap function. All "(V) Variable teacher" codes will be ignored.

The following two input options are only available for use with the Lesson Planning module.

No swap with other subjects

Teachers can only be swapped between lessons of the same subject.

Swap only lessons with equal periods

Teachers can only be swapped between lessons with the same number of periods.

3.4.1.2.4 Swap only within one class level

Teachers can only be swapped between classes of the same level.

3.4.1.2.5 Re-assign original teachers

Tick this option to delete all teacher swaps carried out in previous optimisation runs. This means that each subject will again be taught by the teacher originally assigned to the lesson under "Lesson | Teachers".

After a successful teacher swap, a display of all swapped and originally assigned teachers can be viewed via "[Scheduling | Diagnosis](#)". The figure on the left shows a situation where the "?-Teacher" function (i.e. teachers suitably qualified to teach the subject) is active and teacher "New" was replaced by "Gauss" for lesson 94.

The lesson details window displays the current and the replaced teacher (see figure).

The screenshot shows two windows from the 'Timetable diagnosis' software. The top window, 'New diagnosis', has a table with columns 'Wtg', 'Num', and 'Diagnosis'. The 'Diagnosis' column contains 'Missing teachers' (with a count of 14) and 'Teacher changed' (with a count of 14), both highlighted with red boxes. The bottom window, 'Class 1b (Newton) / L-Cl', shows a table with columns 'L-No.', 'Cl,Te.', 'Per', 'Teache', 'Subje', 'Clas(es)', 'Subjec', 'Home Room', and 'Double per'. The 'Teache' column shows 'Ander (Arist)' for lesson 30, which is highlighted with a red box. A red arrow points from the 'Teacher changed' entry in the top window to the 'Ander (Arist)' entry in the bottom window.

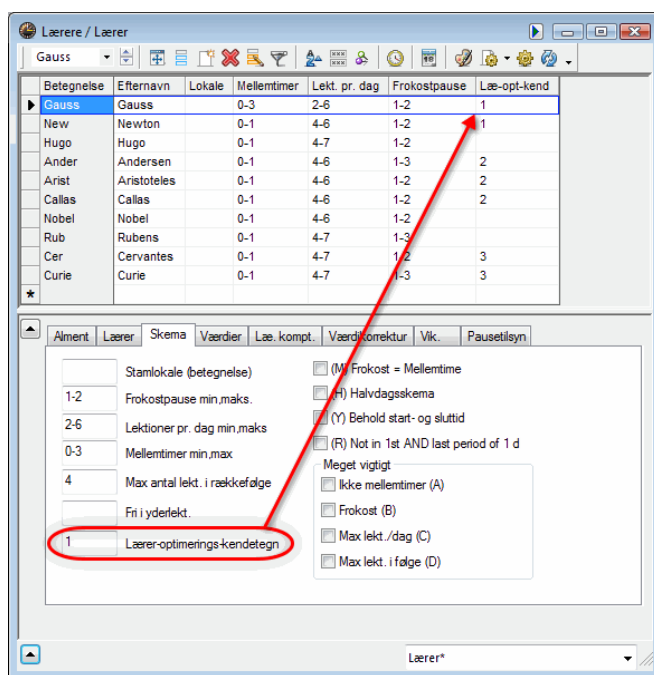
3.4.1.2.6 Teacher optimisation code

The module Lesson Planning offers with the teacher optimisation code a further method to limit swaps with variable teachers.

You can find the code in "Master Data | Teachers" and in the lesson windows. The codes in these two types of windows are independent of each other.

The code can be used to select a pool of lessons or teachers in which swaps are possible. Identical codes mean that the teachers of the marked lessons can be swapped.

You can assign the codes 1-9 and A-Z. The codes are always an additional limitation. For instance, if you have activated the option "Swap only within one class level" and you have entered the code 1 for the teachers Gauss and Newton then swaps of Newton's lessons are only possible with lessons of Gauss in the same class level.



3.4.2 Strategies

Untis offers five different optimisation strategies for the construction of your timetable:

[Strategy A - Fast optimisation](#)

[Strategy B - Intensive optimisation](#)

[Strategy C - Fast percent placement](#)

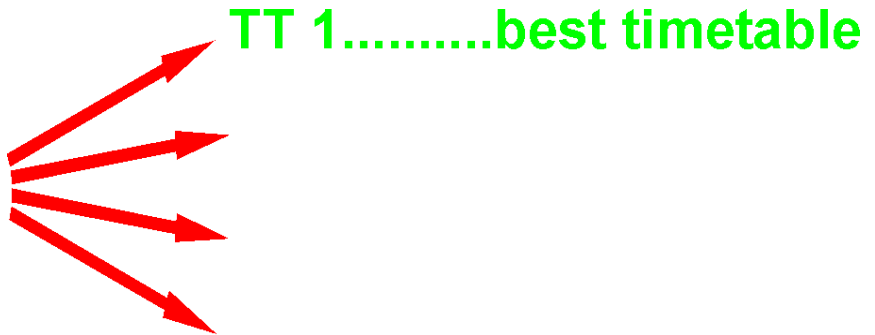
[Strategy D - Intensive percent placement](#)

[Strategy E - Overnight optimisation](#)

3.4.2.1 Strategie A - Fast Optimisation

Using strategy A, Untis constructs a series of timetables with n individual timetables where n stands for the number you have entered under "[Optimisation series: No. of TTs \(1-20\)](#)".

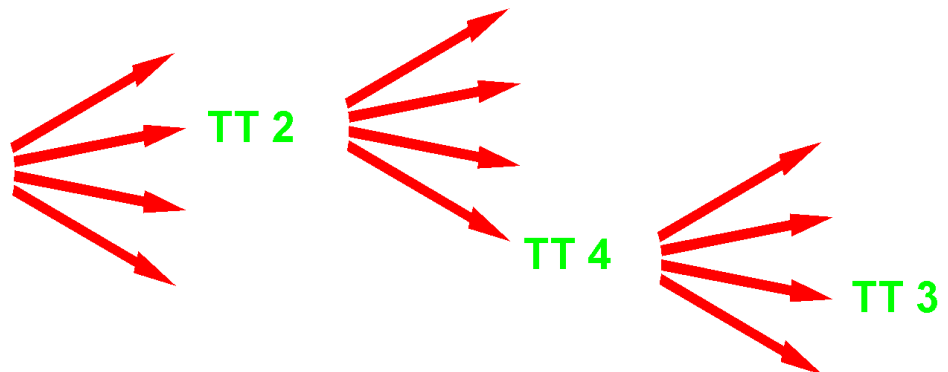
The best timetable is loaded and displayed at the end of the optimisation run. If you have activated the option "Save the results of the optimisation in work files" on tab "Auto-save" under "Settings | Miscellaneous" then this timetable is saved additionally as file work0.gpn.



3.4.2.2 Strategy B - Intensive optimisation

Using Strategy B, Untis initially constructs a series of n individual timetables – as for [Strategy A](#) . The best timetable of the series is then used as the starting point for a new series of n individual timetables, all of them very similar to the best previous timetable.

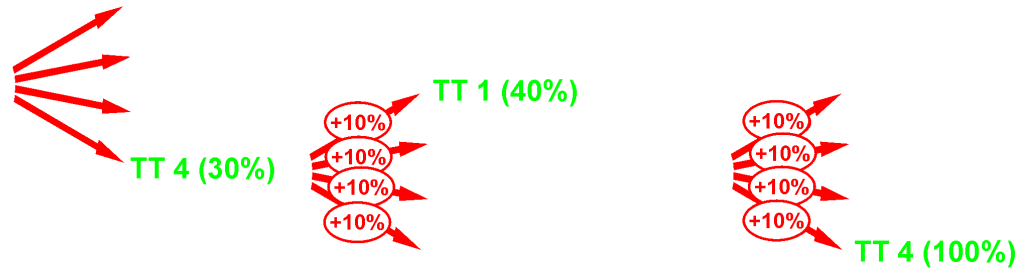
This process (the construction of a series of new timetables, each based on the best timetable of the previous series) is repeated until the final timetable can no longer be improved upon.



3.4.2.3 Strategy C - Fast percent placement

Using Strategy C, the software constructs a series of n timetables using the percentage of periods specified in the input field „% of periods to be scheduled“. If this field is empty, the default value of 30% is used instead. The best of the n timetables is locked conditionally and used as the basis for the next series of n timetables. This run will use a higher percentage of periods, i.e. more periods will be scheduled. When the input field for "Increase percentage by" is empty, Untis automatically substitutes the default value of 10%.

The percentage of periods to be scheduled is increased by increments until the software reaches the point where it attempts to schedule all the periods (100%).

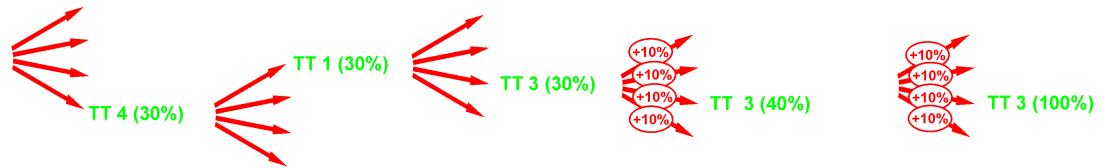


3.4.2.4 Strateg D - Intensive percent placement

Optimisation strategy D is a combination of strategies B and C.

Untis initially schedules the percentage of periods specified under „% of periods to be scheduled“, as in [strategy B](#) . This means that the software constructs a number of series of n timetables until the final timetable can no longer be improved upon. As with [strategy C](#) , the best timetable is locked conditionally and used as the basis for the next optimisation step where the percentage of the periods to be scheduled is increased by increments. The default value for the increase is 10% (unless you have specified a different value).

The percentage of periods to be scheduled is increased by increments until the software reaches the point where it attempts to schedule all the periods (100%).

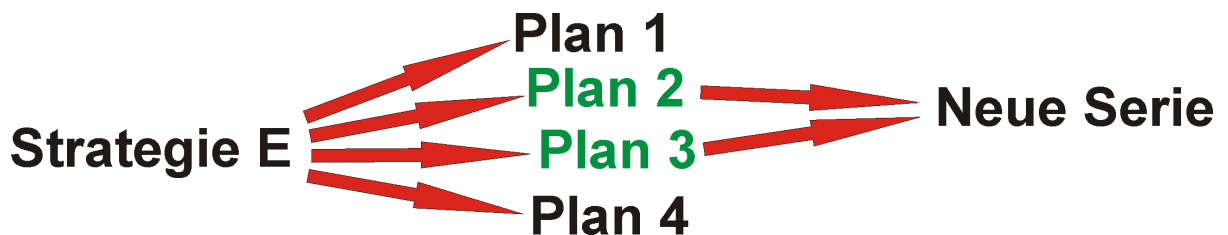


3.4.2.5 Strategy E - Overnight optimisation

Strategy E is a genetic algorithm which involves a huge amount of computations and provides excellent results.

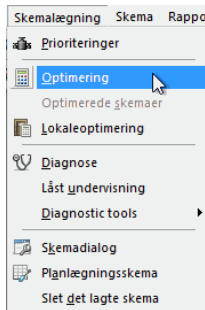
First, Untis calculates a series of timetables. On contrary to [strategy B](#) , where only one timetable is the base of new series, this strategy uses two timetables (mother and father timetable) as the base for new series.

You should use this strategy if you have got already good results with other strategies. Usually strategy E can still improve the result. The length of the optimisation depends on the size of the school, the number of timetables to be calculated, the optimisation level and the performance of your computer. This can take "overnight", indeed.



3.4.3 The accompanying window

Start the [optimisation](#) process by opening the optimisation dialogue under "Scheduling | Optimisation", entering the desired settings and clicking on <OK>.



If the [data analysis](#) window appears, check the displayed messages and/or rectify the displayed errors and click on <OK>.

An accompanying window appears which consists of two panes. The upper part of the window is the information window containing functions for the management of the optimisation process (pause, cancel etc.).

The window also provides a continuous display of key data of the current optimisation run, including an evaluation of the current timetable (penalty points), the number of unscheduled periods, window periods (for classes) and core time infringements (these are periods with a time request of +3 that the software is unable to fill for some reason). These data provide a first, rough impression of the quality of the timetable under construction. The tools for a more detailed diagnostic runs are described in the chapter "[Diagnostics tools](#)" below.

The lower part of the window is used for the display of errors (i.e. lessons that cannot be scheduled) and the number of timetables and series the tool has finished optimizing.

 A screenshot of the 'Optimeringsmetode' window. It has a title bar with 'Optimeringsmetode' and standard window controls. The window contains several buttons: 'Stop optimeringen', 'Snarest', 'Afbryd', 'Optimering i gang 02.02', 'Efter skema', 'Efter serie', and 'Hjælp'. Below the buttons, it shows 'Strategi: D [9/2] 4/1/0/0', '57. Serie Betinget låst', and '9. Skema i serien'. A table titled 'Tabeller opbygges' displays optimization data.

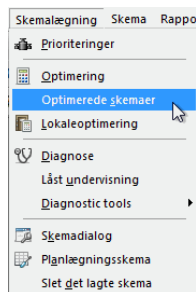
60 %	Bedømmelse	Ikke sk.lagt	Mellemtimer	Kernetid	Subj 2X / Day	DbIPrds - Error
Igangværende skema :	1 354	0	1	58	0	6
Bedste skema :	0	0	0	0	0	0
1. Skema i serien	1 301	0	0	58	0	5
2. Skema i serien	1 349	0	3	58	0	5
3. Skema i serien	1 410	0	3	55	0	8
4. Skema i serien	1 353	0	2	57	0	5
5. Skema i serien	1 322	0	1	58	0	5
6. Skema i serien	1 337	0	1	59	0	5
7. Skema i serien	1 331	0	0	57	0	6
8. Skema i serien	1 354	0	1	58	0	6
9. Skema i serien	0	0	0	0	0	0

When the yellow-blue <OK> button appears on the screen, the optimisation run is complete.

3.4.4 View optimisation results

When the [optimisation](#) is completed the best result is loaded. Via the optimisation window you can switch to other timetables, too. Click on the respective line in the upper part of the window.

After you have confirmed by clicking on the yellow-blue button, you can switch to the different optimisation results either by loading the work.gpn files or via the menu item "Scheduling | Optimised Timetables". The latter method is only possible during the session in which the optimisation was started. If Untis was closed then this menu item is greyed out.



Every individual timetable can be stored as a separate file (work1.gpn to work *n* .gpn) by selecting the option "Save the results of the optimisation in work files" on tab "Auto-save" under "Settings | Miscellaneous". This gives you the possibility to load, view and analyse all the results anytime.

The image shows the Untis interface with several windows. The main window displays a timetable grid for '4 - Klasse 4 (Nobel) Skema'. The grid has columns for days (Ma, Ti, On, To, Fr, Lø) and rows for subjects (1-8). The timetable is as follows:

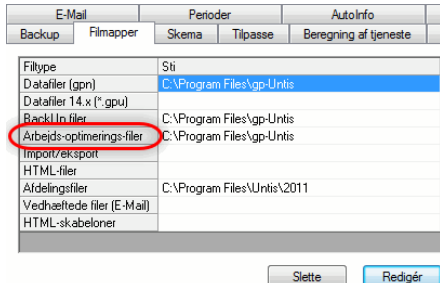
	Ma	Ti	On	To	Fr	Lø
1	Dan	Mat	Mus	Dan	Dan	Dan
2	His	Bio	Dra	Geo	Mat	Mat
3	IdrP	Rel	Fys	Sto	His	Geo
4	Fys	IT				
5						
6	Eng	IdrP				
7						For
8						

Below the grid, there is a table with columns: U-nr., Lærer, fag, lok. The data row shows: 26, Ander, Mus., (Ps2), 4, 1-41.

Two 'Optimeringsmetode' windows are open, showing a table of optimization results. The table has columns: Bedømme, Ikke sk. lagt, Møllentimer, Kernebid, Subj ZK / Day, DbiPids - Error. The first window shows 'Bedømme skema' 107 selected. The second window shows 'Skema 6' selected. Both windows have a yellow 'OK' button.

Hint!

You can change the directory of the work.gpn files by defining a path via "Settings | Miscellaneous", tab "Directories" field "Optimisation results".



3.5 Diagnostics tools

The master and lesson data of your school contain a vast store of information and it is often difficult to keep track of the amount of data. This means that it is easy for inaccuracies, mistakes and errors to creep in when entering or modifying data. Searching for these inaccuracies and errors is a bothersome, but necessary task. The diagnosis tool is designed to facilitate this task.

This chapter not only deals with errors, but also with so-called "input weaknesses". Input weaknesses are data that, while not technically wrong, can cause inferior or unexpected results.

[Percentage planning](#)

[Diagnosis](#)

[Overall diagnosis](#)

3.5.1 Percentage planning

After finishing your data entry, you should initially carry out a percentage planning run (e.g. at 30%) to identify lessons that the Untis software categorizes as "difficult". As a rule, the programme attempts to place such lessons as quickly as possible to prevent them from causing an obstruction later during the process.

Hint!

The "difficulty" of a lesson is determined by the number of unavailable lesson elements, the number of element couplings and the size of the lesson block.

Caution!

Specifying a planning priority for lessons (on the ["Timetable"](#) tab) has a profound effect on this aspect of the optimisation process. Do not use this option lightly and use it only when you have good reason to do so!

If Untis encounters problems during the scheduling of the very first 30% of periods and if this very first optimisation run is unable to schedule certain periods, the first thing to do is to increase the number of timetables to be constructed and the number of optimisation steps. If the tool is still unable to schedule the periods, you can assume that the input data contain input weaknesses or even errors.

3.5.1.1 Example

Errors and input weaknesses are described in greater detail below. The following example provides a brief introduction to the percentage planning function.

1. Open the file *demo2.gpn* .
2. Delete all timetables via the menu item "Scheduling | Delete the Timetable".
3. An information window appears. Click on <OK>.
4. Carry out a timetable [optimisation run](#) (via "Scheduling | Optimisation") and enter the value 30 in the field "% of periods to be scheduled".
5. Display the timetable for class 1a ("Timetable | Classes").

The timetable for class 1a should correspond approximately to the timetable shown in the figure below. There may be slight variations in display depending on the software version you are using.

As mentioned before, the percentage applies to the entire school and not to individual classes. The example shows that more than 50% of the periods for class 1a have been scheduled. The software would have scheduled proportionately fewer periods for other classes. The high percentage of scheduled periods indicates that the lessons of class 1a are more "difficult" to schedule than the lessons of other classes.

Click on the subject "Design".

	Ma	Ti	On	To	Fr	Lø
1	Eng	Mat	Mat	Dan	Eng	Mat
2	Dan	Eng	Rel	Geo	Dan	Dan
3	Geo	Mus	Eng	Mat	IdrP	IdrP
4	Mat	For	Dan	Rel	Bio	Eng
5	Bio					Mus
6						
7		*Slø		IdrP		
8						

U-nr.	Lærer, fag, lok	Kl.	Tid	Skoleuge
7*	Ander, Slø, Slø	1a	1-41	
	Gauss, Slø, Slø	1b		
	Curie, Hån, Hån	1a, 1b		
				Sum

The period details window shows that the subject Design is difficult to schedule because three teachers are involved in the lesson (Andersen, Gauss and Curie) and two rooms are required (the Chemistry lab and the Physics lab). Furthermore, another class (1b) takes part in the lesson. If Untis attempted to schedule this lesson towards the end of the optimisation run, the software would find it much more difficult to find a slot on the timetable that would suit all teachers, rooms and classes involved in the lesson.

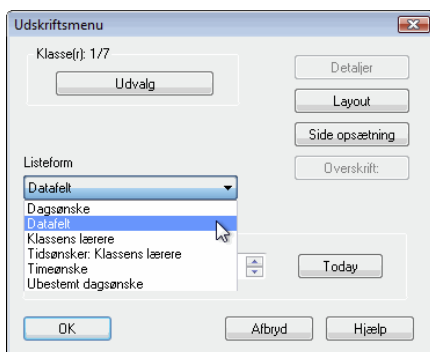
When the percentage planning function is unable to schedule periods, you can assume that inaccuracies and errors during data input are to blame.

3.5.1.2 Time requests

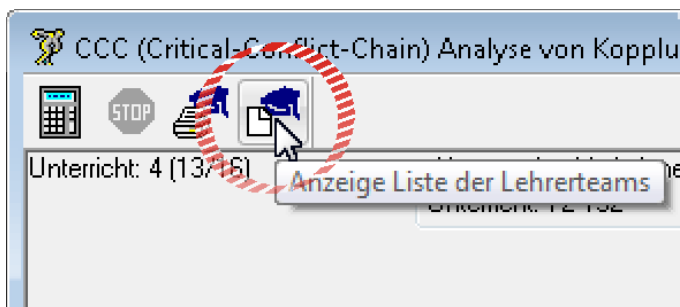
[Time requests](#) are another reason why the software may find it difficult to construct the perfect timetable. A number of predefined lists can help you search for input weaknesses and errors caused by time requests. Access the lists by clicking on <Print> or <Print Preview> in the master data or lesson window.



Under "Print selection", a number of different types of lists are available (e.g. teacher teams, day requests, etc.).



The following example is based on the conflicting period requests of a teacher team. If you have the module Lesson Planning select "Teacher teams" as type of list in "Master Data | Teachers". If not, you can get this list via "Scheduling | CCC-Analysis", button <Displays the teacher teams>.



The only days not blocked for any of the involved teachers are Thursday and Friday.



A lesson consisting of three single periods could not be scheduled for this teacher team without violating a "-3" time request (something the optimisation tool would never do) or the single period condition (something the optimisation tool might do, depending on your weighting settings for conditions such as "Avoid errors with double period").

For further information on teacher teams, please see the chapter "Teacher teams".

3.5.1.3 Options

An important point is the distinction between " *must* " and " *can* ".

The settings "1,1" under "Master Data | Subjects" in the input field "Afternoon periods/week Min, Max" on the "Timetable" tab **forces** Untis to schedule exactly one afternoon period. The setting "0,1", by contrast, **enables** Untis to schedule exactly one afternoon period. If you come across an undesired or even unnecessary afternoon period in your timetable, check the values in this input field. For the same reason, you should try to keep your options open when it comes to double period conditions and enter "0,1" or "1,2".

3.5.1.4 Locked periods

Try not to restrict the [optimisation](#) tool by manually scheduling a large number of lessons. Reconsider if some periods really need to be scheduled manually (see also the chapter "[Manual timetabling](#)").

3.5.1.5 Weightings

When the software is unable to schedule large numbers of periods, it makes sense to call up the [weighting dialogue](#) again and to determine if the setting "extremely important" (5) is strictly necessary in all of the cases. In order to resolve an input weakness, it is often sufficient to reduce the setting of one or two items by one level to "very important" (4) (see also the chapter "[General notes](#)" under "Weighting" above).

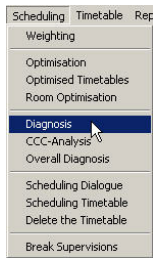
Increase the [percentage](#) of the periods to be scheduled until you are certain that all the input weaknesses have been resolved.

Use the more complex [optimisation strategies](#) only when you are certain that all entries are correct. An important tool for the identification and location of input errors and violations of conditions are the "[Diagnosis](#)" and "[Overall Diagnosis](#)" tools. These are described in the following chapter.

3.5.2 Diagnosis

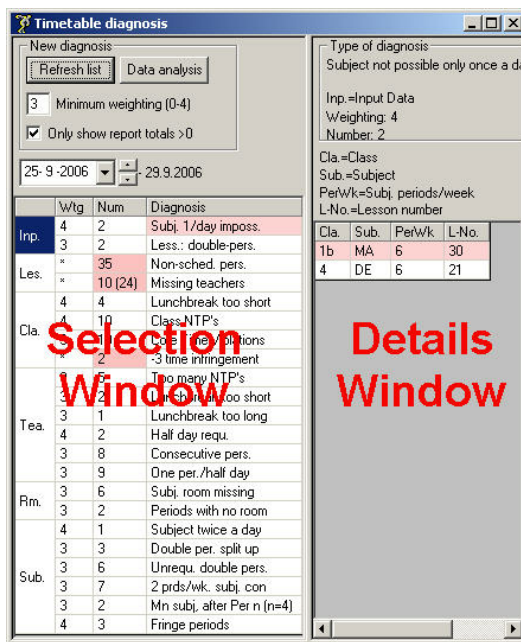
After optimising your timetable, you can analyze the results with the diagnosis function of the Untis software using a number of different criteria.

Open the diagnosis window via the menu item "Scheduling | Diagnosis". The window is divided into two sections – the [selection window](#) on the left and the [details](#) window on the right.



3.5.2.1 The selection window

The largest space in the selection window is devoted to the list of items diagnosed by the diagnosis tool. On the right-hand side of the diagnosis items you can see the sum of infractions for this particular item. The number is marked red if there is at least one severe (highly weighted) problem. You can open the items individually by clicking on the symbol "+" (like the Windows Explorer) or you can open all items at once by clicking on <Details>.



Wtg (Weighting)

The second column is entitled "Wtg" (Weighting) and shows the level of importance you assigned to the individual items in the weighting dialogue.

For example, if the slider for "Respect lunch break requests for classes" is set to 5 (extremely important), the value "5" is displayed in the column "Wtg" for "Lunch break too long" and "Lunch break too short".

An asterisk (*) in this column means that the item is not weightable.

Num (Number)

The third column entitled „Num“ displays the number of violations of this particular item. In some cases, a second figure appears in brackets. This figure refers to the number of periods.

For example, the entry "10 (24)" under "Les." for item "Missingteachers" means that there are 10 lessons with a total of 24 periods per week where teachers are missing.

Diagnosis

The fourth and last column entitled „Diagnosis“ describes the actual item.

Please note that items with a weighting of "5" or marked (*) for non-weightable are highlighted with a different colour under "Num." to indicate that the timetable contains a violation.

Next are the control elements in the upper part of the selection window:

<Refresh list>

Click this button to start a new diagnosis run. This also applies when you close the diagnosis window and carry out a new diagnosis run via "Scheduling | Diagnosis".

<Data analysis>

Click this button to carry out a [data analysis](#) (see the appropriate chapter).

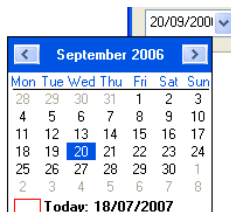
Minimum weighting (0-4)

Items with a weighting below the value you enter in this window are no longer displayed. Items categorized as non-weightable (*) will still be shown.

Only show report total >0

Tick this box if you want to see only the items where a violation has been detected on the timetable.

Please note that the diagnosis tool only diagnoses the timetable for one week – an essential precaution when using the modules Multi-Week Timetable or Multiple Terms Timetable where different timetables may be in use in different consecutive weeks (e.g. for term teaching or block lessons). When analyzing such timetables, specify by means of the date setting (below the control elements) which week you want to analyse.

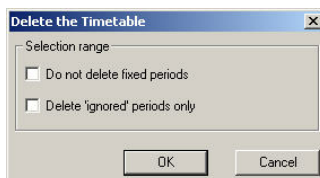


3.5.2.2 The details window

The details window on the right-hand side of the diagnosis window allows you to obtain further information about individual items by selecting the item in the selection window. The problem will be displayed in a separate timetable window.

The following example demonstrates the function of the diagnosis tool. Depending on which version of Untis you are using, the [optimisation](#) results may differ from the results shown in this example.

1. Open the file demo2.gpn.
2. Delete the current timetable via "Scheduling | Delete the Timetable". The window "Delete the Timetable" appears. Ignore the two tick boxes and click on <OK>.



- Open the optimisation dialogue via "Scheduling | Optimisation".
- Enter in both fields, "[Optimisation series: Number of timetables \(1-20\)](#)" and "[Optimisation level \(1-9\)](#)" the number 9 and start the optimisation run by clicking on <OK>.

When the optimisation run is complete, you can see in the optimisation information window that the constructed timetable contains several core time violations (unscheduled periods with the time request „+3“). But you cannot see where these violations occur.

Open the diagnosis function ("Scheduling | Diagnosis").

Detach the "pin" from the timetable (button <Lock Type>). The class timetable now becomes an "accompanying" timetable, which means that the display in the timetable window is now independent from the active window.



Open the category "Teacher" and click on "Double NTP".

The details window displays all teachers whose timetable contains double NTPs.

Click on an entry in the details window. The accompanying timetable switches to affected teacher and the period in question is highlighted.

The screenshot shows two windows. The left window, titled 'Timetable diagnosis', has a 'New diagnosis' section with 'Refresh list' and 'Data analysis' buttons. Below is a table of violations:

W/g	Num	Diagnosis
4	2	Subj. 1/day imposs.
*	4	with preferred room
3	2	Less.: double-pers.
*	35	Non-sched. pers.
*	10 (24)	Missing rooms
4	4	Lunchbreak too short
4	10	Class NTP's
3	17	Diff. rooms
*	2	-3 time infringement
3	5	Too many NTP's
3	2	Lunchbreak too short
3	1	Lunchbreak too long
4	2	Hall day requ.
3	12	Diff. site rooms
3	8	Consecutive pers.
3	9	One per./half day
3	6	Subj. room missing
3	2	Periods with no room
4	1	Subject twice a day
3	3	Double per. spill up

The right window, titled '1b - Class 1b (Newton...)', shows a timetable grid for the period 18.9.2006 - 30.6.2007. The grid has columns for Monday, Tuesday, Wednesday, Thursday, and Friday. The first row shows violations (+3) in green for Monday, Tuesday, Wednesday, and Friday. A red circle highlights the Friday violation, and a red arrow points to it from the 'Click!' text.

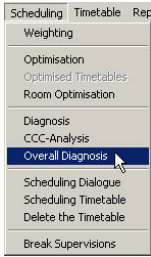
You now need to decide if you want to accept the displayed violations or take evasive action. One option would be to increase the weighting for "Avoid creating double NTPs for teachers" to enable the optimisation tool to place a greater emphasis on this function.

While working with the diagnosis tool, keep checking items to which you have assigned a low weighting as there could also be hidden input errors in areas often regarded as unimportant.

3.5.3 Overall diagnosis

The overall diagnosis function provides an overview of the classes and teachers that have ended up with the worst timetables (measured against your settings).

Call up the total diagnosis function via "Scheduling | Overall Diagnosis".



The overall diagnosis function applies to only one week – for the same reasons stated above for the [diagnosis function](#) (see previous chapter). Select the desired week via the date combo box.

Next to the date combo box, you will see another box where you can specify if you want to display a teacher list or a class list.

The list itself is organized in order of least desirable timetable. The first column of the list entitled "Points" contains the total number of penalty points. Additionally, the list displays the three worst periods in each timetable, again with their respective values.

Click on one of the three periods in the list to display the causes of the bad result under "Reason". When you have an accompanying timetable open at the same time, the period is displayed immediately. Please note that when you first open the overall diagnosis window or click on <Refresh> (and before you click on any of the periods), the cause displayed under "Reason" always refers to the first period in the row.

The screenshot shows the 'Overall Diagnosis' window. At the top, there is a date dropdown set to '25-9-2006', a 'Class(es)' dropdown, and 'Refresh' and 'Print' buttons. Below this, it shows 'School week: 2' and 'Calendar week: 39'. Summary statistics are: 'Penalty points (total): 54 386' and 'Total unsch. per.: 35'. The main table has columns for 'Points', 'UnSc', and 'The 3 worst periods' (sub-columns: 1, 2, 3, Points), and a 'Reason' column. A red circle highlights the 'Mo-5' entry in the 'The 3 worst periods' column of the first row, with a red arrow pointing to it and the word 'Click!' written in red.

	Points	UnSc	The 3 worst periods			Reason
			1	2	3	
3b	10992	5	We-6 1 000	We-7 1 000	Th-6 686	Double period split up
1b	10972	9	Th-3 620	Th-4 620	Th-5 471	NTPs
3a	10591	6	We-5 1 000	We-7 1 000	Mo-4 608	Double period split up
2a	9525	8	We-3 645	We-3 645	Fr-5 41	Subject twice a day
2b	8898	8	We-3 172	Th-1 128	We-5 115	Double period split up
4	8531	5	Mo-6 1 000	Mo-7 1 000	Mo-5 480	Double period split up
1a	6877	6	Mo-5 233	Fr-5 195	We-5 132	Double period split up

The example shows that the overall diagnosis tool detected a split double period. Click on the entry in the overall diagnosis window to highlight the period in the accompanying timetable. The other periods of this subject – in this case, only one other period on Friday – are also highlighted.

The problem can be resolved by increasing the weighting of point "Avoid errors with double periods" by one level.

An empty field under "Reason" indicates that the timetable for this class or teacher is already very good (i.e. has relatively few penalty points). In relation to the other periods, the displayed period may be one of the three worst placed ones. Overall, however, it is fairly well placed. It is unnecessary, therefore, to change the period manually.

In short, the diagnosis function provides an overview of all timetables while the overall diagnosis function targets the worst timetables in the school and aims to improve them. The overall diagnosis window also

displays the causes of violations.

	Mon.	Tues.	Wed.	Thur.	Frida.
1	EN	MA	GEc.	MU	MA
2	MU	EN	PEG.	DE	RE
3	BI	AR	MA	EN	EN
4	PEG.	AR	DE	MA	DE
5	TX	RE			TX
6					
7		DS.			
8					

L-No	Tea	Subj	Rm.	Cla.	Time	Stud.	Special text	Cl
69	Curie	TX	CL	1a				

4 Manual Timetabling

4.1 Manuelles Planen

Untis offers several different possibilities for manual scheduling (the scheduling, shifting and deleting of periods): the manual [scheduling in the timetable](#), the [scheduling timetable](#) and the [scheduling dialogue](#). The most important functions are possible with all three tools like scheduling, shifting, swapping, locking and deleting of periods as well as the manual room allocation. The scheduling timetable and the scheduling dialogue offer special functions and additional information.

4.2 Scheduling periods in the timetable

The easiest method of scheduling periods manually – manual timetabling using the timetable – relies on familiar windows and functions. The following tasks can be carried out manually on a normal class or teacher timetable:

- [scheduling periods](#) ,
- [locking periods](#) ,
- [swapping periods](#) ,
- [deleting periods](#) and
- [allocating rooms](#) .

4.2.1 Scheduling periods

The aim of this exercise is to place periods in an empty timetable and lock them to prevent the automated scheduling tool from moving them during a later optimisation run.

1. Open the file demo.gpn and close all open windows (shortcut keys Ctrl + K).
2. Delete the current timetable via „Scheduling | Delete the Timetable“.

3. Open a class timetable and a class lesson view.

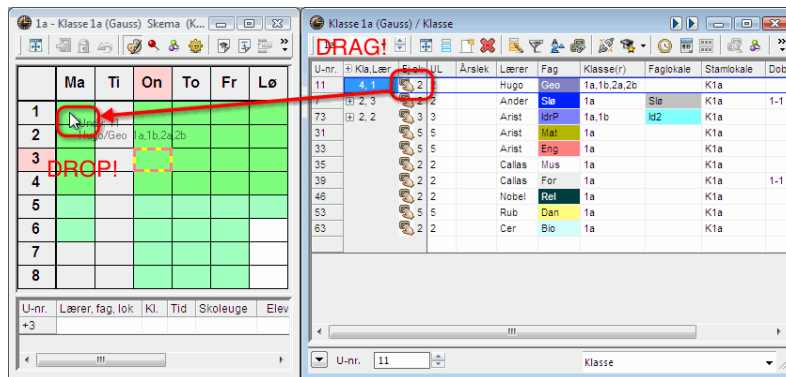
The symbol  in the column „Cl, Te.“ marks all lessons with unscheduled periods.

4. Drag the first lesson of class 1a (lesson 11) into the neighbouring timetable window by clicking on the lesson in the second grey column entitled „Cl, Te.“ and holding down the mouse button (see example below).

While dragging the lesson away, the lesson details (lesson number, teacher, subject and class involved in the lesson) will be displayed.

Cells with a green background indicate slots on the timetable where lessons may be scheduled without risk of conflicts.

The software also takes into consideration any additional settings you have made. For instance, the display shows that lesson 11 cannot be scheduled on Tuesdays because teacher Hugo is scheduled to have a free day on Tuesdays („Master Data | Teachers | Time Requests“).



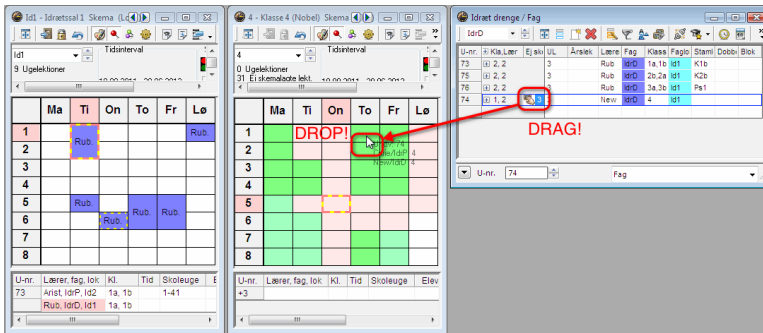
5. Drag the second lesson of class 1a (lesson 7) onto the timetable. Since the settings specify a double period, the lesson is automatically scheduled as a double period.

4			
5			
6			Slø.
7			

Room availability

Lesson cells highlighted purple (see example below) indicate that the allocated room (i.e. the designated room or one of its alternative rooms) is not available.

If you drop a lesson on a purple field the lesson is scheduled without a room. The room allocation of the dropped lesson is not changed. As additional warning that you have scheduled a lesson without a room you can hear a "beep" (You find more about the allocations of rooms in chapter "[Room allocation](#)").

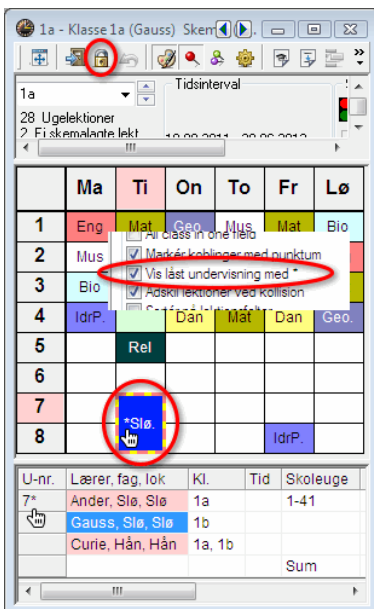


4.2.2 Locking periods

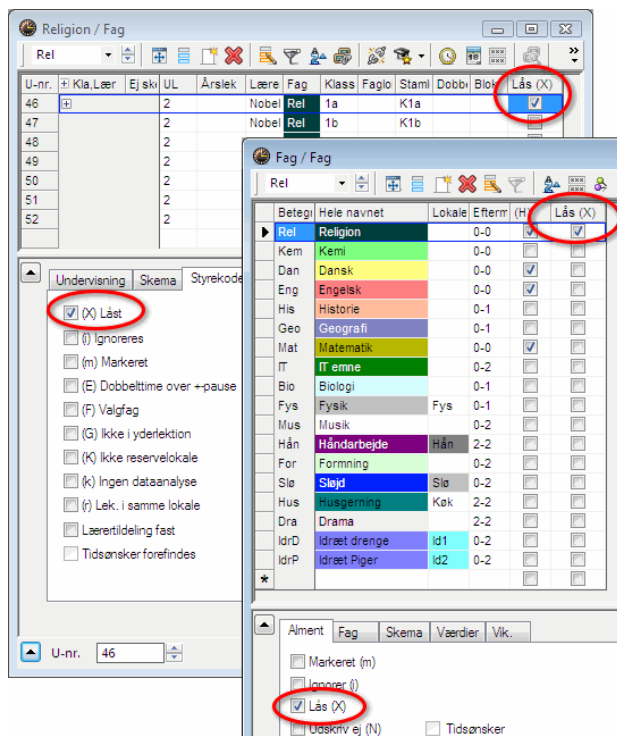
Lock a period in place by clicking on <Lock period> in the tool bar of the timetable. This will prevent the automated scheduling tool from moving the period during a subsequent optimisation run. Alternatively, lock the selected period by pressing F7. The same key can be used to unlock a period.



Locked periods are marked with an asterisk (*) in the period details window next to the lesson number. The asterisk can also be displayed in the timetable period („Layout 2“ tab under <Timetable Settings>).



If you want to lock all the periods in a timetable, display the column „(X) Locked“ in the lesson window (via <Grid Adjustment>) and tick the corresponding box. Alternatively, use the „Codes“ tab in the form view of the lesson window. If you want to lock all the scheduled lessons of a class, teacher, subject or room, use the appropriate function in the master data of the element you want to lock.

**Hint!**

You can see all locked periods in the window "Lessons | Locked Lessons". In this window you can also unlock the lessons on the different levels. You find more in chapter "Locked lessons".

4.2.3 Moving periods

Periods can easily be moving from one slot on the timetable to another. Please see the following example.

1. Open the file demo.gpn and set a class timetable to class 3a.
2. Left click on Monday, period 7, hold down the mouse button and drag the period away.
3. Drop the period in any slot on the timetable.

	Ma	Ti	On	To	Fr	Lø
1	His	Eng	IdrP.	Fys	Dan	Geo
2	Eng	Rel	Dan	Slø	IdrP.	Geo
3	IdrP.	Bio	His	IT.	Mat	Dan
4	IT.	Dan	Mat	Mat	Rel	Fys
5	Mat		*Kem.	Eng		
6			Slø.			
7	Bio		Slø.	For.		
8				For.		

U-nr.	Lærer, fag, lok	Kl.	Tid	Skoleuge	Elev

Empty green cells denote slots on the timetable where a lesson may be scheduled without risk of conflict. The different shades of green indicate the suitability of the positions for the dragged lesson: the darker, the better. The evaluation depends on the parameters you have entered (time requests, double periods, weighting, etc.).

Red fields indicate that the scheduling would be possible without collisions but the timetable would be significantly worse because of e.g. a blocking (time request -3). The details window shows which element is blocked.

MUS	Mat.	Utd
Bio	Geo	
Mat.	Bio	Dar

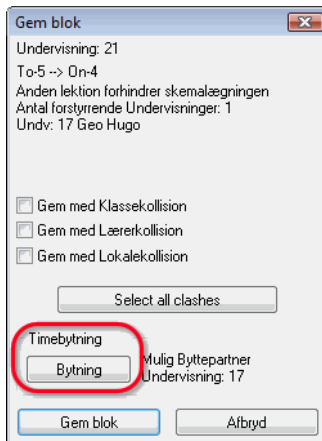
Cells highlighted purple indicate that the room allocated to the lesson is not available.

Move double periods and lesson blocks in the same way as you would move single periods. However, if you only want to move one period of a lesson block or a double period, press the <Ctrl> key prior to selecting the period you want to schedule. This means that the periods are displayed as single periods and can be moved individually.

5		Mat.		Dan
6	For			
7	For			IdrP.
8	Fys			IdrP.

4.2.4 Swapping periods

Periods highlighted green (green cells occupied by a period) can be swapped with other periods highlighted green. Drop a period on a green cell and a window will appear where you can specify if you want to swap the period or if you want to create a conflict.

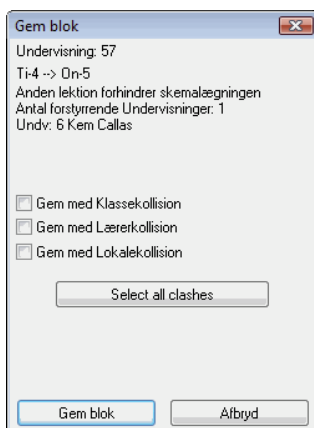


4.2.5 Scheduling periods with clashes

Moving a period to a non-highlighted cell is not possible without creating a clash. The lesson details window displays the lesson number and details of the lesson in conflict with the moved period.

If you decide to drop the period in such a cell, a window will appear showing the following two options:

- <Cancel> - cancels the move.
- <Save block!> - saves the moved (active) lesson in the cell where you dropped it and de-schedules the lesson originally scheduled in that slot.
- Use the combo boxes „Save with teacher, class or room clash“ to schedule a lesson with conflicts.



The period details window displays all the elements of the lessons scheduled at this time. Display conflicts on the timetable by activating the option „Separate periods in case of clash“ („Layout 2“ tab under <Timetable Settings>). Please also see the chapter „Layout 2“ in the section „Timetable display“).

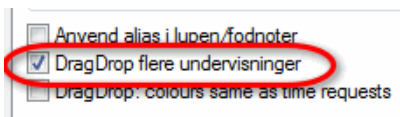
Each of these lessons can be moved separately.

3	His	Mus	Mat.	Dra
4	Dan	Bio		
5		D	G M	Dan
6	For			
7				

You can also move all lessons that lie on one position (either as clashes or as cluster in course planning).

Timetable in the cluster mode

If you want to switch the timetable to the cluster mode altogether then tick "DragDrop: Multiple lessons" on tab "Layout 2" in the settings of the timetable.



Selection with the Y key

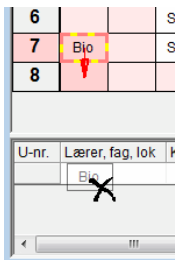
If you usually want to select single lessons (courses) but occasionally you want to shift the whole cluster then press the Y-key and click on the respective position. Now you can move all lessons in this period at once.

	Ma	Ti	On	To	Fr	Lø
1	IdrP.	Slø.	IT	Fys	Bio	Mat.
2	Dra	Slø.	Rel	His	IT	Mat.
3	His	Mus	Mat.	Dra	Rel	Dan
4	Dan	Bio			Geo	Eng
5			D G M		Da N G M	
6	For					
7	For			IdrP.		
8	Fys			IdrP.		

U-nr. Lærer, fag, lok Kl. Tid Skoleuge Elev

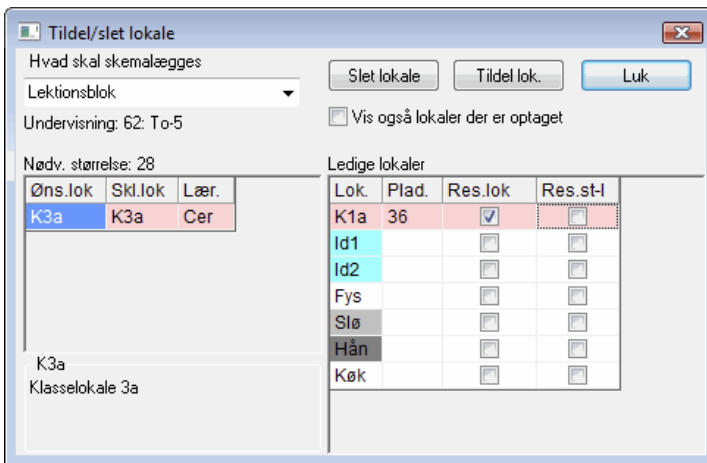
4.2.6 Deleting periods

Delete (de-schedule) periods by dragging them to the lesson details window and dropping them.



4.2.7 Allocating rooms

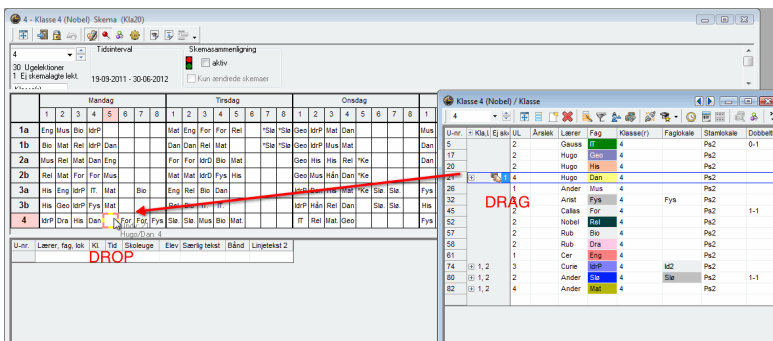
The timetable window also offers options for manual room allocation. Use the button <Allocate / Delete this room> to allocate a room to a scheduled period or to delete rooms already allocated. A detailed description of this function can be found under „The scheduling timetable“ in the chapter „Allocating rooms“.



All alterations in the timetable can be undone step by step by clicking on the button <Undo>

4.2.8 Planning in the overview timetables

You are not limited to the single timetables for manual planning. You can also use the overview timetables. This helps you keep the overview of all teachers and classes.



4.3 The scheduling timetable

The scheduling timetable offers a second method of manually modifying timetables. In addition to the functions described in the chapter „Scheduling periods on the timetable“ above, the scheduling timetable offers additional functions for manually scheduling lesson periods.

- Open the file demo.gpn.
- Open the scheduling timetable via the menu item „Scheduling | Scheduling Timetable“.

The display shows the timetable of class 1a with additional information relevant for the scheduling process.

Undv	EjS	Tid	Kl.	Lær.	Fag
53	2		1a	Rub	Dan
30	1		1b	Arist	Mat
34	1		2b	Callas	Dan
21	1	Ma-5	4	Hugo	Dan

	Ma	Ti	On	To	Fr	Lø
1	Eng	Mat	Geo	Mus	Mat	Bio
2	Mus	Eng	IdrP	+ Dan	Rel	Eng
3	Bio	For	Mat	Eng	Eng	Mat
4	IdrP	For	+ Dan	Mat	+ Dan	Geo
5	x	Rel	*X*			
6	-					
7		*Sle		*X*		
8		*Sle		*X*	IdrP	

U-nr.	Lærer, fag, lok	Kl.	Tid	Skoleuge	Elev	Særlig
53	Arist, Eng, K1a	1a	1-41		28	
+3						

The upper left-hand part of the scheduling timetable displays the active class (1a). All unscheduled lessons are listed on the „Unscheduled“ tab. Click on lesson 53 in the list. As you can see, two periods of lesson 53 remain to be scheduled.

The main timetable window contains a number of scheduled lesson periods together with additional information relating to the active lesson (Subject German; Class 1a; Teacher Rub). This is lesson 53 shown in the example. Please see the following chapter for a detailed description of the additional information shown on the timetable.

4.3.1 Scheduling periods

+ Denotes a period of the active lesson (the three already scheduled periods of lesson 53 in the example).

***** Locked period of the active lesson (see the chapter „Lockingperiods“).

x.... Fields marked x are blocked by the teacher. For instance, teacher Rub is already scheduled to teach class 1a on Mon-5 which means that lesson 53 with teacher Rub cannot be scheduled for Mon- 5 without creating a conflict.

X.... A capital X shows a coupling involving the teacher (e.g. Wed-5).

***x*, *X*, *&.....** A marker with two asterisks denotes locked periods creating a conflict (e.g. the PE lesson on Thu-7,8 involving teacher Rub). Locked periods cannot be moved by the automated scheduling tool (see the chapter „Locking periods“).

&.... Denotes periods with several unavailable elements (classes and/or teachers).


Activate lesson 11 „GEC“, class 1a, on Sat-4 by double clicking on the period. The symbol „&“ appears in slot Thu-5, indicating that a period of lesson 11 cannot be scheduled for Thursday, period 5, since several elements of the lesson (class 1b, 2b and the teacher Hugo) are unavailable at that time (see example).

	Ma	Ti	On	To	Fr	Lø
1	Eng	Mat	Geo	Mus	Mat	Bio
2	Mus	Eng	IdrP	Dan	Rel	Eng
3	Bio	For	Mat	Eng	Eng	Mat
4	IdrP	For	Dan	Mat	Dan	Geo
5	&	Rel	*X*	&	x	
6	-	-	-	-	X	
7	-	*Sle	-	*X*	&	
8	-	*Sle	-	*X*	IdrP	

- The periods on Mon, Tue and Thu not occupied by classes or teachers are marked „-“. The symbol identifies periods that cannot be scheduled for another reason. In this case, the reason is a time restriction for class 1a on three afternoons of the week (see <Time Requests> under „Master Data | Classes“).

If a cell is available (such as Fri-5 in the example), the cell can be used to accommodate the active lesson.

	Ma	Ti	On	To	Fr	Lø
1	Eng	Mat	Geo	Mus	Mat	Bio
2	Mus	Eng	IdrP	Dan	Rel	Eng
3	Bio	For	Mat	Eng	Eng	Mat
4	IdrP	For	Dan	Mat	Dan	Geo
5	&	Rel	*X*	&	x	
6	-	-	-	-	X	
7	-	*Sle	-	*X*	&	
8	-	*Sle	-	*X*	IdrP	

Schedule the unscheduled period of lesson 11 by double clicking on the cell Fri-5 or by clicking on 

Room availability

Click on lesson 21 on the „Unscheduled“ tab. As you can see, some periods are highlighted in purple. This means that the allocated room and the designated alternative rooms are unavailable.



For purposes of clarity, the colour codes defined under master data and displayed in the scheduling timetable can be deactivated by clicking on „Show lesson colours“

	Ma	Ti	On	To	Fr	Lø
1	IdrP	Sle	IT	Fys	Bio	Mat
2	Dra	Sle	Rel	His	IT	Mat
3	His	Mus	Mat	Dra	Rel	+ Dan
4	+ Dan	Bio	Geo		Geo	Eng
5		Mat	*X*	+ Dan		
6	For	-				
7	For	-		IdrP		
8	Fys	-		IdrP		

4.3.2 Locking periods


Lock scheduled periods by clicking on <Lock period>  if you want the scheduling tool to ignore them during the optimisation run. Locked lessons are marked with asterisks (



4.3.3 Swapping periods

Find a suitable swap partner for a period on the same class timetable by dragging the period away (hold down the left mouse button). Every period on the timetable suitable for swapping will be highlighted in green and marked with a double arrow. Drop the period in a slot of your choice and confirm the move by clicking on <Swap>.

1. Open the file demo.gpn and the scheduling timetable.
2. Switch to class 4.
3. Activate the Math period on Tue-5 by double clicking on the period.
4. Drag the period away.

The period can be moved without risk of a conflict to any cell highlighted green (Fri-5 and Sat-5). The period can be swapped with any period highlighted green and marked with a double arrow .

5. Drop the period on the cell Wed-1 (GEc) and confirm by clicking on <Swap>.

	Ma	Ti	On	To	Fr	Lø
1	IdrP	Sle	IT	Fys	Bio	Mat
2	Dra	Sle	Rel	His	IT	Mat
3	+ Dan	Mus	Mat	Dra	Rel	+ Dan
4	+ Dan	Bio	Geo		Geo	Eng
5		Mat	*X*	+ Dan		
6	For	-				
7	For	-		IdrP		
8	Fys	-		IdrP		

Gem blok ✕

Undervisning: 21
Ma-4 -> On-4
Anden lektion forhindrer skemalægningen
Antal forstyrende Undervisninger: 1
Undv: 17 Geo Hugo

Gem med Klassekollision
 Gem med Lærerkollision
 Gem med Lokalekollision

Select all clashes

Timebytning

Mulig Byttepartner
Undervisning: 17

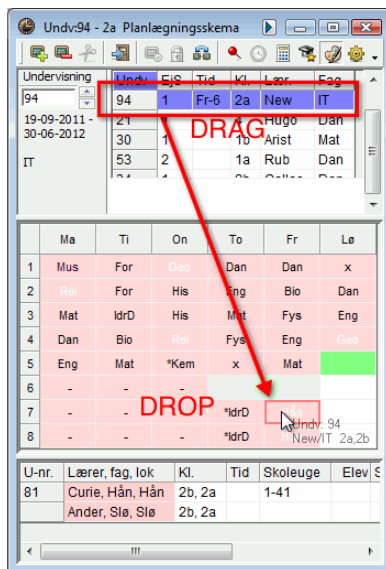
4.3.4 Scheduling periods with conflicts

As a rule, the Untis software assumes that each teacher, class and room can only be involved in a single lesson at any one time. The software displays a warning whenever you are attempting to schedule an element (class, teacher, room) that is unavailable for the period in question.

However, there may be situations when you actively want to provoke such a conflict, for instance when some students of a class take part in one particular lesson and other students of the same class take part in another, but none of the students take part in both lessons.

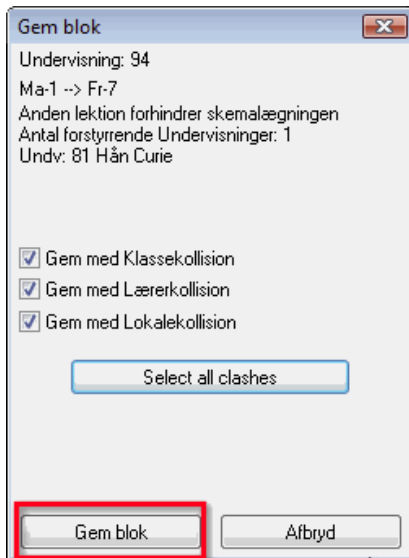
You want to schedule Graphics for classes 2a and 2b at the same time as the Textiles lesson.

1. Open the file demo.gpn and the scheduling timetable.
2. Switch to the scheduling timetable of class 2b and de-schedule lesson 94 on Friday, period 6 by double clicking on the lesson.



The list of unscheduled lessons now contains one period of lesson 94.

3. Mark the lesson in the „Unscheduled“ window and drag it to the textiles period on Fri-7 (hold down the left mouse button). The period details window displays full details of the conflicting lesson.
4. Release the left mouse button. Select „Save with class clash“ and click on <Save block!>.



The period details window now shows that two lessons are scheduled for Fri-7 (classes 2a and 2b).

5	Eng	Mat	*Kem	x	Mat	
6	-	-	-			
7	-	-	-	*drD	IT	
8	-	-	-	*drD	Hån	

U-nr.	Lærer, fag, lok	Kl.	Tid	Skoleuge	Elev
94	New, IT, K2a	2a, 2b	1-41		
81	Curie, Hån, Hån	2b, 2a	1-41		
	Ander, Slø, Slø	2b, 2a			

Further options for scheduling conflicting lessons can be found in the chapter „The scheduling dialogue“.

4.3.5 Deleting periods

Delete scheduled periods by selecting the period and clicking on <Delete Period> or by pressing the <Delete> key. The lesson will appear on the „Unscheduled“ window again. Alternatively, delete the active lesson with a double click.



When attempting to de-schedule a locked period, a message will appear asking you if you wish to proceed.

Periods can also be de-scheduled by dragging them to the period details window (see also the chapter „Deleting periods“ under „Scheduling periods on the timetable“).

4.3.6 Allocating rooms

Use the button <Allocate/Delete Room> to allocate a room to a scheduled period or to delete an already allocated room. This function is available on the timetable, on the scheduling timetable and in the scheduling dialogue.

You want to allocate different rooms to the Textiles lesson on Tuesday, periods 7 and 8.

1. Open the file demo.gpn and the scheduling timetable („Scheduling | Scheduling Timetable).
2. Place the cursor on Tue-7 and click on <Allocate/Delete Room>. Alternatively, open the window by using the shortcut <Ctrl> + <R>.



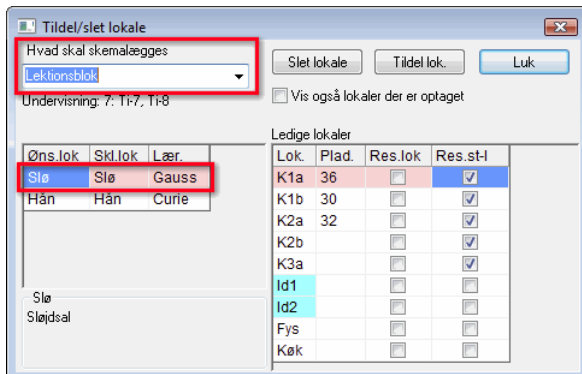
The left window of the dialogue box contains a list of all the rooms involved in this lesson.

Select from the drop-down menu „Assign the room to“ for which period you want to change the room allocation:

- a) a single period
- b) the period block
- c) all periods of a lesson

Planned The desired, designated room for the lesson Actual The scheduled room
Te. The teacher assigned to teach the lesson

3. You want to change the room allocation for the double period shown in the example above. Select „the period block“.



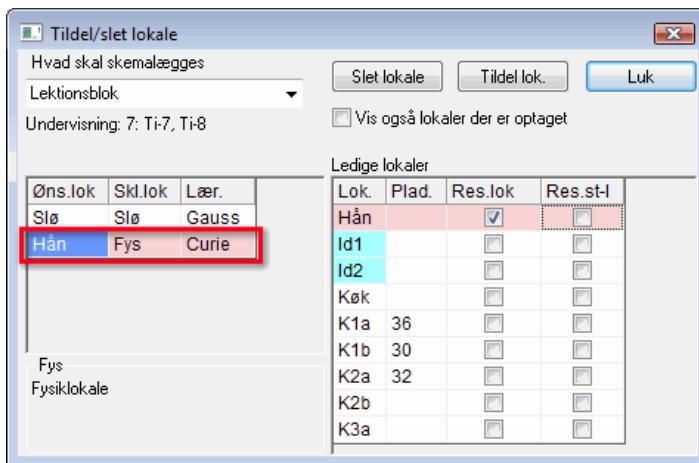
The right half of the window displays the list of available rooms.

- Rm.: The abbreviated name of the room
- Cap.:tab>The room capacity (if entered under master data)
- Alt.-Rm.: The room is an alternative room for the designated lesson room
- Alt. HRm: The room is an alternative room for the home room of the class.

In the example (see above), the rooms R1a to R3a are marked „Alternative to the home room“ since the rooms are part of the alternative room chain for room R1a (home room of class 1a) and for room R1b (home room of class 1b).

Select a room (e.g. R1a) and click on <Allocate room>. The lesson will now take place in R1a instead of the physics lab.

Click on the second row in the left part of the window and replace the room „CL“ with another (e.g. HE1). Alternatively, allocate the new room by double clicking on the room.



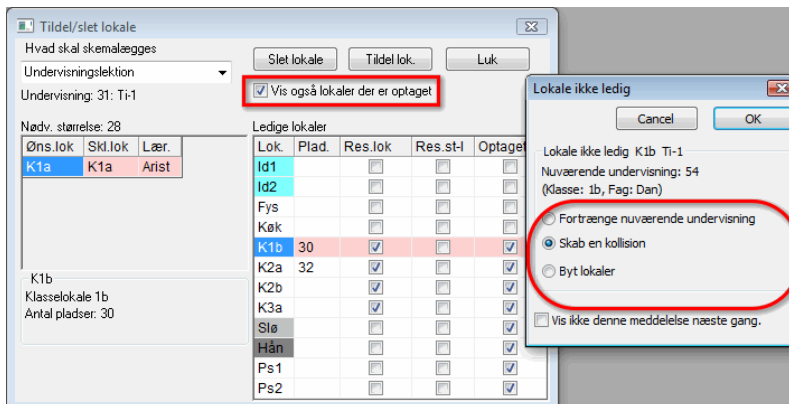
The period details window of the scheduling timetable now displays the newly allocated rooms for periods 7 and 8. The previously allocated rooms for the lessons are shown in brackets.

U-nr	Lærer, fag, lok	Kl.	Tid	Skolet
7*	Ander, Slø, Hån (Slø)	1a		1-41
	Gauss, Slø, Hån (Slø)	1b		
	Curie, Hån, Fys (Hån)	1a, 1b		
				Sum

Click on <Delete room> if you want to delete an already allocated room.

To see the occupied rooms too in the room allocation window, select the option "Also show occupied rooms". If you assign one of these rooms, you can

- create a clash,
- displace the interfering lesson or
- swap rooms.



4.3.7 Undo

Each planning step carried out on the timetable or the scheduling timetable is logged on the „History“ tab and can be undone via the <Undo> button. Clicking on <Delete> will delete all the planning steps shown in the list.

Undervisning	Undv	Tid
53	-	Fr-4
46	+	To-5
46	-	Ti-5

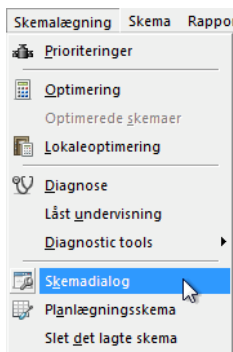
All the functions of the scheduling timetable described above are equally applicable to the scheduling dialogue (please see the following chapter).

4.4 The Scheduling Dialogue

The scheduling dialogue offers the most advanced functions for placing and moving periods manually. Similar to a peg board, the periods of the week are arranged in columns at the top and the elements (teachers, classes, rooms) in rows along the side.

The following example provides an overview of the type of information displayed in the scheduling dialogue.

- Open the file demo.gpn and the scheduling dialogue under „Scheduling | Scheduling Dialogue“.



4.4.1 The input field

Enter the lesson number of the lesson you want to view or modify (lesson 11 in the example) in the input field.

Undervisning	Undv	EJS	Tid	Kl.	Lær.	Fag
11	53	2	Fr-4	1a	Rub	Dan
	30	1		1b	Arist	Mat

4.4.1.1 Lesson search

Instead of entering a lesson number, you can use the input field to search for a particular lesson by entering a combination of details (classes, teachers and/or subjects involved), separated by a comma.

- Entering 1a,DE will display the lessons of subject DE for class 1a;
- Entering Arist,1b will display the first lesson teacher Aristotle teaches to class 1b.

4.4.2 The period details window

The bottom part of the scheduling dialogue shows information pertaining to the active lesson (compare the similar function of the lesson details window on the timetable). For further details on the functions, please see the chapter „Timetable display“. As you can see, lesson 11 is a coupled lesson involving classes 1a, 1b, 2a and 2b and teacher Hugo. The subject GEC is scheduled to take place in room R1a.

The middle part of the window contains details on all the classes, teachers and rooms involved in the active lesson for the entire week.

4.4.3 Period availability

Lesson 11 is scheduled to take place on Wednesday, period 1, and Saturday, period 4, as shown by the symbol + in the first row (lesson row) and the symbol + for all elements involved in the lesson (see following example).

An empty cell in the grid denotes an available period for scheduling an element (teacher, class or room) – for example Fri-5 for classes 1a and 1b. You can easily verify the information by cross-checking the details on the class timetable.

4.4.3.1 Time requests

Any time requests entered for the lesson or the elements involved in the lesson are highlighted with their appropriate colour code. Time requests entered under the master data of a subject are displayed in a separate row. The example on the right shows that a time request has been entered for subjects „DS“ and „HE“.

If you have entered unspecified time requests, you can assign these a different colour in the time request window (e.g. purple for -3).

	Mandag								Tirsdag						
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7
Undv															
7a															
8a	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8b	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ander	-2	-2	-2	-2	-2	-2	-2	-2	x	x	x	x	x	x	x
Lær. Curie	x								x	x	x	x	x	x	x
Lok. Sla									x	x	x	x	x	x	x
Kak									x	x	x	x	x	x	x
Fag Sla	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Hus	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
Lær. 7-1															

Time requests entered under master data or lessons can be deleted directly in the scheduling dialogue by clicking on "-" or by pressing the <Delete> key.

4.4.3.2 Flags (markers)

Cells containing a flag (marker) (x, X, O, &) denote periods already occupied (see the example below). The different markers have the following meaning:

O Occupied by the active lesson

Example: Lesson 11 on Wed-1 and Sat-4

x Occupied by an uncoupled lesson

Example: The classes involved in lesson 11 have an uncoupled lesson on Fri-1.

X Occupied by a coupled lesson

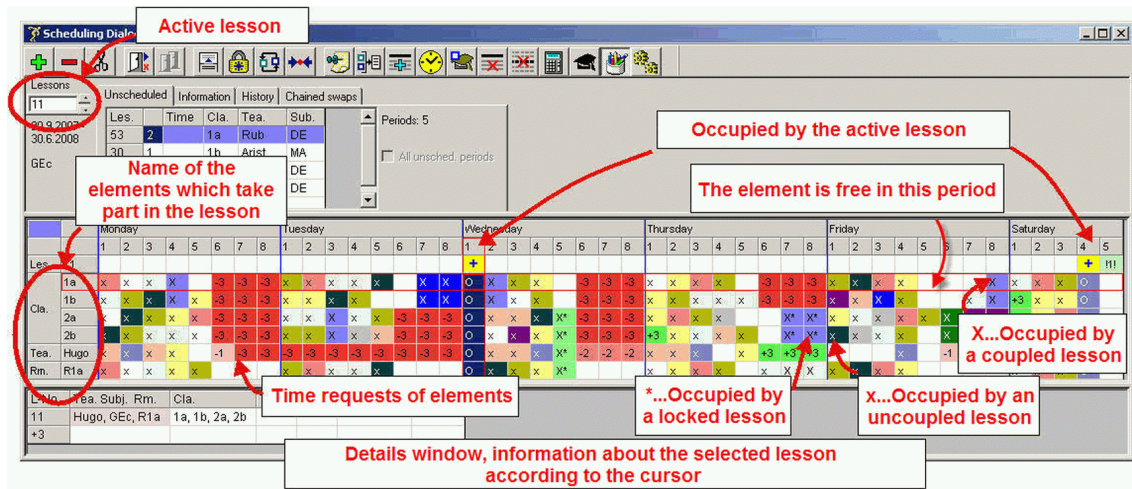
Example: Class 1a has a coupled PE lesson on Fri-8.

& Occupied by several (different) lessons

(See the chapter „Scheduling periods with clashes“)

* Locked lesson

Example: The PE lesson of classes 2a and 2b on Thu-7,8 is a locked lesson.

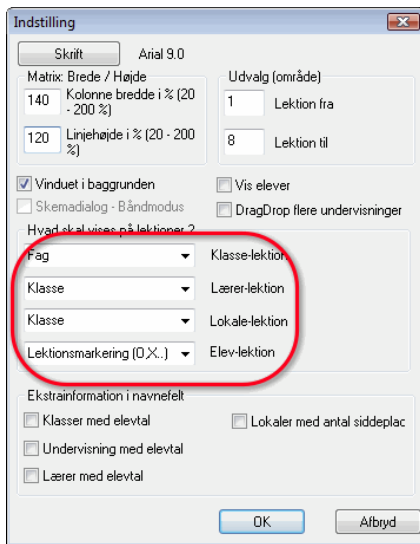


Flags (markers) for periods in offsite rooms

Instead of x,X, lessons in off-site rooms are marked y,Y (for the first off-site location) and z,Z (for all other off-site locations). See also the chapter „Off-site rooms“.

4.4.3.3 Displaying abbreviated names

Instead of flags (markers) (x,X,& etc.), you can display the abbreviated names of the elements involved in a lesson by selecting the desired names under <Settings>.



In the example, the class rows show the abbreviated names of the subjects, and the teacher and room rows show the class names. The <Settings> function can also be used to change the font size, the column width and the row height. As the example shows, the active period can now be identified by the colon preceding the abbreviated name (e.g. :GEc), and a coupled lesson by a dot preceding the name (e.g. .DS).

		Mandag								Tirsdag		
		1	2	3	4	5	6	7	8	1	2	3
Undv	33	+									+	
Kl.	1a	Enr	Mus	Bio	Jdrf	-3	-3	-3	Mat	Ent	For	
Lær.	Arist	:1a	1b	3a	1a	-1	-2	4	1a	:1a	2b	
Lok.	K1a	:1a	1a	1a	4	3b				:1a	1a	
Lok.	Køk											

4.4.3.4 Saving individual settings

When using the Untis software on two different computers (e.g. at school and at home), you will rarely be working with two identical systems. Differences in hardware (screen display, graphics cards etc.) can necessitate annoying and time-consuming adjustments when switching from one system to another.

Your individual settings for the scheduling dialogue (e.g. font size, column width etc.) are therefore saved in the Untis.ini file locally on your computer, saving you the hassle of having to re-enter your settings when loading the programme on another computer.

Windows XP

C: \ Documents and Settings \ <Name> \ Application Data \ Untis

Windows Vista

C: \ User \ <Name> \ AppData \ Roaming \ Untis

Further details on active lessons can be found on the „Information“ tab in the details window of the scheduling dialogue (see below).

4.4.3.5 The „Information“ tab

Enter the lesson number „21“ in the input field and confirm by pressing the <Tab> or the <Enter> key. The left half of the „Information“ tab now provides the following details on lesson 21:

Placed (Scheduled)

3 periods per week have already been scheduled – a total of 122 periods per year excluding holidays and public holidays. The applicable date range is displayed on the left below the input field (here the total school year). The display also contains details on any time restrictions in place for the lesson.

Placed, Target, Diff.

Lesson 21 consists of 4 periods per week, one of which remains to be scheduled, making a difference of 1.

The right part of the tab contains information on the elements involved in the lesson. Place the cursor in the class row to display relevant class details.

Ej skemalagt	Information	Historik	Byttekæde
	Skem.lagt Budget Diff.		1a - Klasse 1a (Gauss)
Uge:	5 5 0		Skem.lagt Ej Ske.L
Ar:	205		Uge: 28 2
			Ar: 1148

Class

Class 4 is scheduled to have 31 periods per week in total, 30 of which have been scheduled and one of which remains to be scheduled. The total number of scheduled periods per year is 1221.

Ej skemalagt	Information	Historik	Byttekæde
	Skem.lagt Budget Diff.		1a - Klasse 1a (Gauss)
Uge:	5 5 0		Skem.lagt Ej Ske.L
Ar:	205		Uge: 28 2
			Ar: 1148

Teacher

Teacher Hugo is scheduled to teach 19 periods per week in total, 18 of which have been scheduled (733 periods per year) and one of which remains to be scheduled.

Any descriptions or special text entered under lessons or master data is displayed below the statistics. The example for Hugo shows that he is employed as a full-time teacher.

Ej skemalagt	Information	Historik	Byttekæde
	Skem.lagt	Budget	Diff
Uge:	2	2	0
År:	82		
Hugo - Hugo			
	Skem.lagt	Ej Ske.L	
Uge:	18	1	
År:	738		
Fast - Fastansat lærer			

4.4.4 The window logic

Like most functions in the Untis programme, the scheduling dialogue is capable of communicating with all other windows.

Synchronisation

When you open a lesson view (or a timetable) and select a lesson, the scheduling dialogue automatically displays the active lesson. Vice versa, the lesson window (or the timetable) always displays the lesson selected in the scheduling dialogue.

Locking the view

Activate the button <Keep the source lesson> to lock the display of the scheduling dialogue.



Window in the background

As a rule, you can bring a window to the front (i.e. activate a window) by clicking on any part of the window. The scheduling dialogue allows you to suppress this behaviour by activating the option „Window in the background“ under <Settings>.



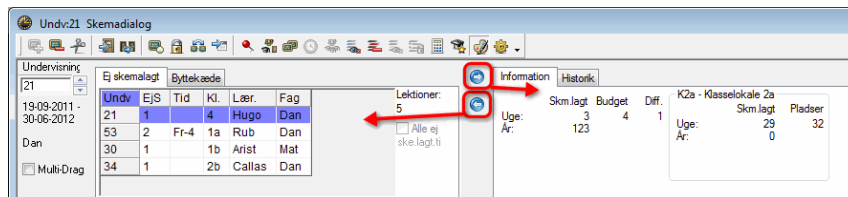
When this function is activated and you want to bring the scheduling dialogue to the front, click on the blue title bar. Although initially an unfamiliar thing to do, activating the window in the background offers a number of advantages.

For instance, you can cover a part of the scheduling dialogue with a timetable window displaying the timetable of the cursor-selected element in the scheduling dialogue.

Vice versa, the scheduling dialogue always displays the currently active master data element (or lesson or diagnosis item) – even when the scheduling dialogue is in the background.


Moving tabs

The individual tabs of the scheduling dialogue (Unscheduled, Information...) can be placed next to each other, too. So you can use the space better for the timetable area and the view is more clear.



4.4.5 Scheduling periods

Schedule periods using one of the following options:

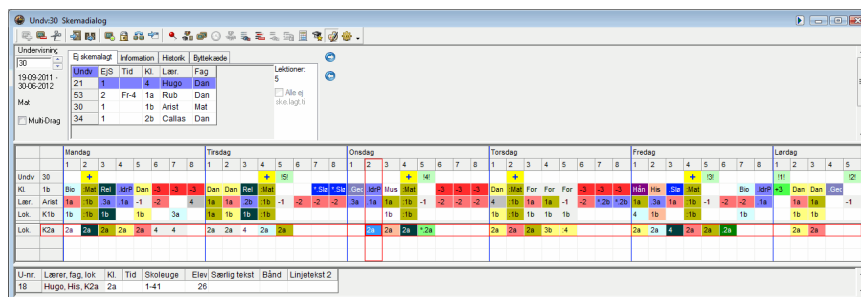
- By double clicking on a period;
- By clicking on the button <Schedule the period> ; 
- By pressing the key K;
- Via the context menu (right mouse button). See the chapter „Deleting period blocks“ for details;
- Via Drag&Drop from the list of unscheduled periods (see the chapter „Scheduling periods with clashes“) or from the lesson view (see the chapter „Scheduling periods“) to the period details window;
- By pressing x on the keyboard and then <Enter>.

Open the file demo.gpn and the scheduling dialogue.

The „Unscheduled“ tab displays all unscheduled lessons.

Activate lesson 30 (Subject Math, Teacher Arist, Class 1b).

Four of the five periods of this lesson have already been scheduled. All the positions where the remaining period can be scheduled in the grid are marked with the symbol !! and a number (e.g. !2!) in the lesson row. The lower the number, the more suitable the slot for scheduling the remaining period.




The example shows that Sat-1, marked !1!, is the most suitable slot for the lesson. The deciding factors are the core time for the class (+3) and the fact that scheduling the period at a different time would create a non-permissible double period (e.g. Fri-4,5) and violate the time request of teacher Arist (-1).

Place the cursor on Sat-1 and click on <Schedule the period>. Alternatively, schedule the period via double click or by pressing the <Insert> key.

When scheduling a period in a slot for which the desired room is unavailable, a warning beep will sound to alert you to this fact.

4.4.6 Deleting periods

Delete (i.e. de-schedule) periods using one of the following options:

- By double clicking on an active period
- By clicking on <Delete period> 
- By pressing the <Delete> key
- Via the context menu (right mouse button) (see example)
- Via Drag&Drop in the period details window (see the chapter „Deleting periods“).

Delete periods of a row

Click on <Delete periods of one row> if you want to delete the entire timetable row of a particular element (e.g. class 1a).



Delete, activate lesson

If you want to delete a non-active period and re-schedule it immediately, click on <Delete, Activate Lesson>. This de-schedules the lesson and automatically activates it so that you can schedule it in a different slot straight away. Alternatively, use the shortcut keys Ctrl - X



4.4.7 Schedule periods with clashes

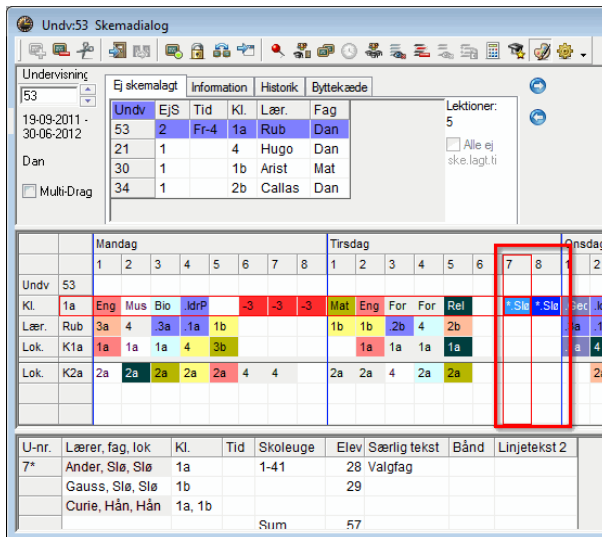
Scheduling periods with clashes allows you to schedule a lesson for a slot on the timetable already occupied by another lesson. This is a useful function especially when scheduling subjects attended by some, but not all of the students of a class.

4.4.7.1 Class clashes

1. Open the file Demo2.gpn and the scheduling dialogue.
2. Activate lesson 70 in the list of unscheduled periods.
3. You want the TX lesson to take place at the same time as the DS class (on Fri-3).
4. Place the cursor on Fri-3.

As you can see in the period details window, teacher Curie and the room CL are available, but class 1b already has another lesson (78) scheduled in this slot.

5. In order to schedule the lesson with a class clash, enter the symbol „&“ in the Fri-3 cell and press the <Enter> key.



The detail window of the scheduling dialogue shows that two lessons are scheduled in the active period.

		Tirsdag							
		1	2	3	4	5	6	7	8
Undv	53							+	
Kl.	1a	Mat	Eng	For	For	Rel		Dan	Slø
Lær.	Rub	1b	1b	2b	4	2b		:1a	
Lok.	K1a	1a	1a	1a	1a	1a		:1a	
Lær.	Curie	4	4	3b	3b			:1a	*1a
Lok.	Slø	4	4					:1a	*1a
Lok.	Hån	4	4	3b	3b			:1a	*1a
U-nr.	Lærer, fag, lok	Kl.	Tid	Skoleuge					
53	Rub, Dan, K1a	1a	1-41	1-41					
7	Ander, Slø, Slø	1a	1-41	1-41					
	Gauss, Slø, Slø	1b		29					
	Curie, Hån, Hån	1a, 1b							
				Sum					

4.4.7.2 Teacher and/or room clashes

Create teacher and/or room clashes by entering the symbol „&&“.

		Tirsdag				
		1	2	3	4	5
Undv	53					&&
Kl.	1a	Mat	Eng	For	For	Rel
Lær.	Rub	1b	1b	2b	4	2b
Lok.	K1a	1a	1a	1a	1a	1a

Alternatively, schedule a lesson with conflicts by dragging a period from the list of unscheduled periods (see the chapter „Scheduling timetable“).

4.4.8 Moving periods via Drag&Drop

Periods in the scheduling dialogue can be moved in the same way as periods on the timetable and the scheduling timetable.

1. Open the file demo.gpn and the scheduling dialogue.
2. Open a class and a teacher timetable.
3. Switch the class timetable to class 3a and activate the Biology lesson on Monday, period 7. The

scheduling dialogue and the timetable for teachers are automatically synchronized to show this lesson.


- Click on the period in the scheduling dialogue and drag it away (left mouse button).

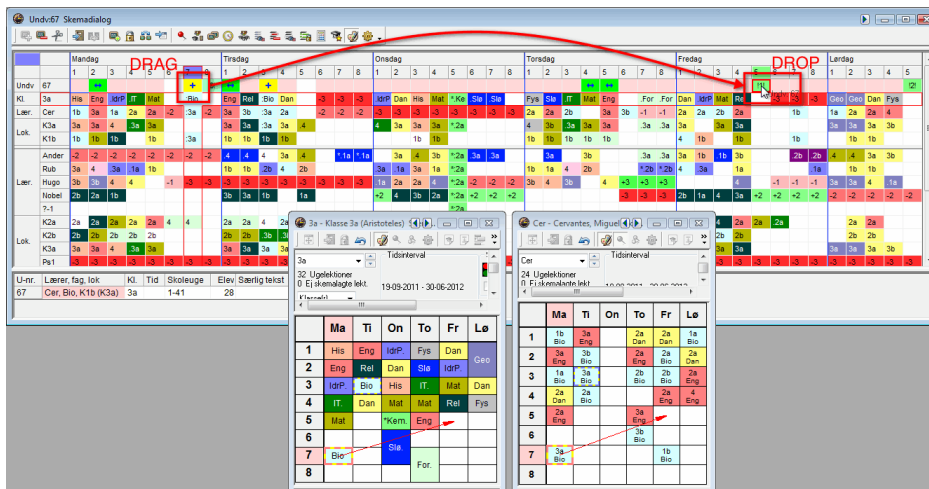
Time slots where the lesson can be scheduled are highlighted in green (see the scheduling dialogue chapter „Scheduling periods“).

When the arrow passes over a scheduled period, the details of the lesson automatically appear in the period details window.

For purposes of clarity red arrow markings show the possible slots on the timetable where the lesson can be moved. You can see at one glance if the move would be advantageous for classes and/or teachers (see example on the following page).

Drop the period in a suitable slot (e.g. Fri-5) by releasing the left mouse button.

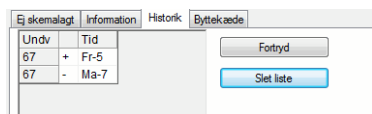
Periods marked with the symbol  are available for swapping.



The screenshot shows the 'Skemadialog' software interface. The main window displays a timetable grid with days of the week (Mandag to Lørdag) and lesson periods (1-8). A red arrow labeled 'DRAG' starts from a lesson slot on Monday and points to a slot on Friday labeled 'DROP'. Below the main grid, there are two windows: '3a - Klasse 3a (Aristoteles)' and 'Cer - Cervantes, Miguel'. The 'Cer' window shows a weekly overview with days of the week (Ma, Ti, On, To, Fr, Lø) and lesson periods (1-8).

4.4.9 Undo

Each planning step carried out in the timetable, in the scheduling timetable or in the scheduling dialogue is logged on the „History“ tab and can be undone via the <Undo> button. Clicking on <Delete> will delete all the planning steps shown in the list.



The screenshot shows the 'Historik' window with tabs for 'Ej skemalagt', 'Information', 'Historik', and 'Byttekæde'. The 'Historik' tab is active, showing a list of planning steps:

Undv	Tid
67	+ Fr-5
67	- Ma-7

Buttons for 'Fortryd' and 'Slet liste' are visible.

4.4.10 Allocating rooms

Open the room allocation function in the scheduling dialogue via the button <Allocate/Delete room> on the context menu (accessible via right mouse click) or by pressing Ctrl - R. Please see the chapter „Allocating rooms“ under „Planning timetable“ for further details on the room allocation function.

When the cursor is placed in the room row under the active lesson and you click on the <Allocate/Delete this room> button, the already allocated room is deleted immediately and replaced with the designated

lesson room.



4.4.11 Room swap

Carry out room swaps between rooms of two coupled or uncoupled lessons by using Drag&Drop.

- Open the file demo.gpn and activate lesson 33.
- Show the room availability for room R1b by entering the abbreviated name of the room in the last empty row of the scheduling dialogue (see also the chapter „Displaying elements“).
- Drag the marker of R1a to the row of room R1b in the same column and drop it. The two rooms will now be swapped.

		Mandag							
		1	2	3	4	5	6	7	8
Undv	33	+							
Lær.	Arist	:1a	1b	3a	1a	-1	-2		4
Lok.	K1a	:1a	1a	1a	4	3b			
Lær.	Hugo	3b	3b	4	4				
Lok.	K1a	1a	1a	1a	4	3b			
Lær.	Hugo	3b	3b	4	4				
Lær.	Nobel	2b	2a						
Lok.	K2a	1a	2a	3a	2a	2a	4	4	
Lær.	Nobel	2b	2a						
Lok.	K2b	2b	2b	2b	2b	2b	2b		
Lær.	Hugo	3b	3b	4	4				
Lok.	K3a	3a	3a	4	-3a	3a			
Lær.	Ps1	-3	-3	-3	-3	-3	-3	-3	
Lær.	Ps2	-3	-3	-3	-3	-3	-3	-3	
Lok.	K1a	1a	1a	1a	4	3b			

When the room is unoccupied, the room will not be swapped, but simply moved.

4.4.12 Displaying alternative rooms

When the cursor is placed in the room row, the function <Alternative room> becomes active. Click on this button to display the next alternative room specified under master data. In the example, this is the room R1b (first alternative room of R1a). Click again to show the second alternative room (R2a) etc.



		Mandag							
		1	2	3	4	5	6	7	8
Undv	33	+							
Lær.	Arist	:1a	1b	3a	1a	-1	-2		4
Lok.	K1a	:1a	1a	1a	4	3b			

		Mandag							
		1	2	3	4	5	6	7	8
Undv	33	+							
Lær.	Arist	:1a	1b	3a	1a	-1	-2		4
Lok.	K1b	1b	1b	1b		1b			

		Mandag							
		1	2	3	4	5	6	7	8
Undv	33	+							
Lær.	Arist	:1a	1b	3a	1a	-1	-2		4
Lok.	K2a	2a	2a	2a	2a	2a	4	4	

You can also show the capacities of the rooms in the scheduling dialogue via the settings if the capacities are entered in "Master Data | Rooms".


		Mandag							
		1	2	3	4	5	6	7	8
Undv	33	+							
Kl.	1a	Eng	Mus	Bio	Idrf		-3	-3	-3
Lær.	Arist	1a	1b	3a	1a	-1	-2		4
Lok.	K1 (36)	1a	1a	1a					

Lokaler med antal siddeplac

4.4.13 Activate new lesson

Place the cursor on a lesson and click on the <Activate lesson> button to activate it. Alternatively, use the shortcut keys Ctrl - Enter or double click on the lesson you want to activate.

4.4.14 Locking periods

Click on <Lock period> to lock the cursor-selected period or to unlock an already locked period. Locked periods will not be moved by subsequent optimisation runs. Locked periods are marked  in the lesson row of the scheduling dialogue and with an asterisk (*) in the element row.



You can also highlight an entire area in the scheduling dialogue and then click on <Lock period> to lock all the selected periods. The same function is available via the context menu accessible by right clicking the mouse button.

4.4.15 Optimisation

This function allows you to start the optimisation process from the scheduling dialogue. The following options are available:



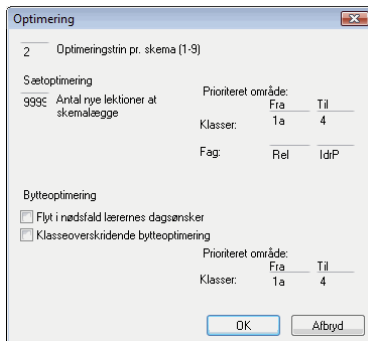
Optimisation level (1-9)

This function allows you to specify the extent of the software's „pre-calculation function“ for each optimisation run. Like a chess game programme, the Untis programme calculates before each „move“ (i. e. before each placement of a lesson) how the move will affect the situation as a whole.

Placement optimisation

- Number of periods to be re-scheduled
Enter the number of periods you want the software to schedule. The optimisation tool starts by scheduling the periods most difficult to place.

- Preferred range
This function allows you to specify certain subjects (e.g. PE) or classes that should receive preferential treatment during an optimisation run.



Swapping optimisation

- Over-ride teachers day requests

When a time request entered in the master data for a teacher cannot be met, this function allows the time request to be moved to another day.

- Swap optimisation across classes

This function enables period swaps between different classes.

- Preferred range

This function allows you to specify certain subjects or classes that should receive preferential treatment during a swap optimisation run.

When a timetable is locked conditionally, the periods already scheduled will not be affected by the placement optimisation process. The optimisation tool places only unscheduled periods. The subsequent swap optimisation tool, however, may swap all the unlocked periods.

The swap optimisation tool uses optimisation strategy A (see the chapter „Strategies“ under „Optimisation“).

4.4.16 Assess the active time slot


This function assesses all the lesson periods of the week to determine their suitability for scheduling at a specific time.




1. Open the file demo.gpn and the scheduling dialogue and activate lesson 30.

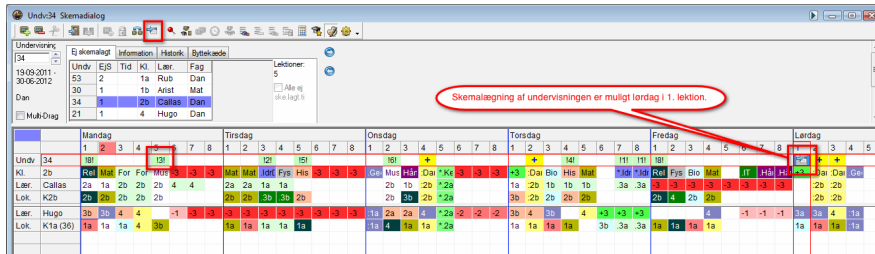
As you can see, there is no lesson scheduled for class 1b on Sat- 1. The aim of the exercise is to find an already scheduled lesson that could be moved to Sat-1.

2. Place the cursor on Sat-1 and click on the  button in the tool bar of the scheduling dialogue.

The software now assesses all the periods of the week to determine their suitability for scheduling on Sat-1. The assessment results are displayed in the lesson row. The lower the value, the more suitable the period. The position for which a period is required is marked with the  symbol in the lesson row (see example on the following page).

Monday, period 5 (Subject „MU“, Teacher „Callas“) is marked with the symbol  and is therefore suitable for moving. The lower the value, the more suitable the period is for moving.

3. The period can be moved to Sat-1 via Drag&Drop.



4.4.17 Replacing teachers

Use this function in the scheduling dialogue to replace a lesson teacher with another.



1. Open the scheduling dialogue in the file Demo2.gpn and open a teacher timetable.
2. Activate lesson 6 (subject „CH“, teacher „Callas“) in the scheduling dialogue.

You want another teacher to replace Callas on Sat-5.

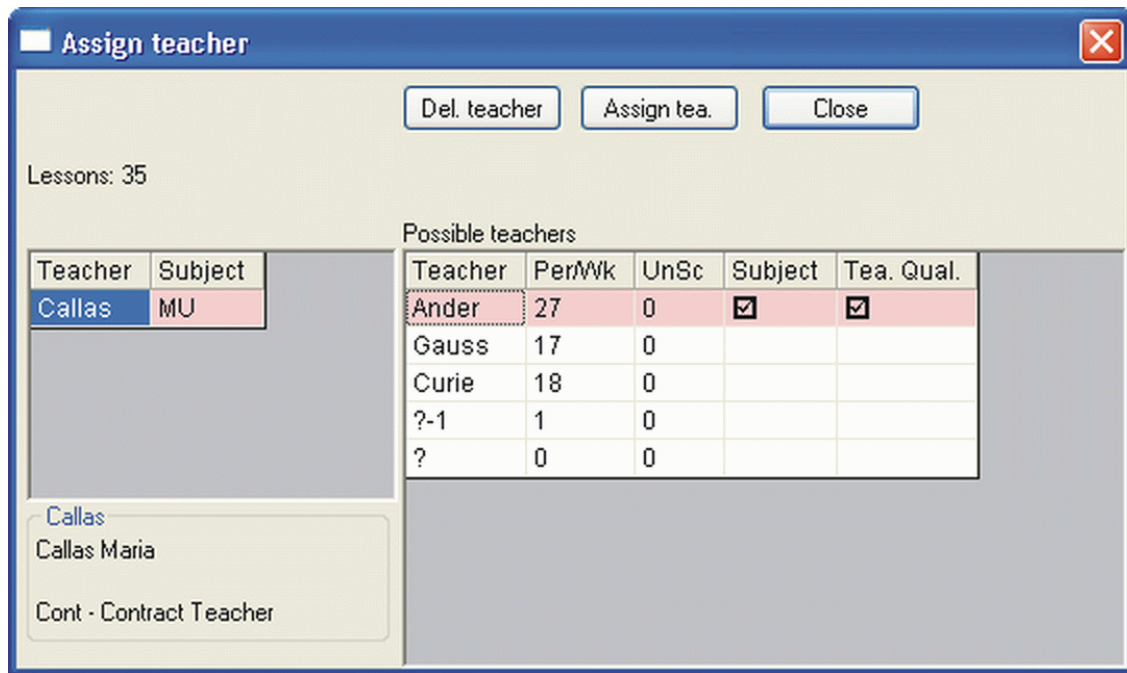
3. Click on <Replace teacher(s)>.

A dialogue box will appear where you can make the desired changes.

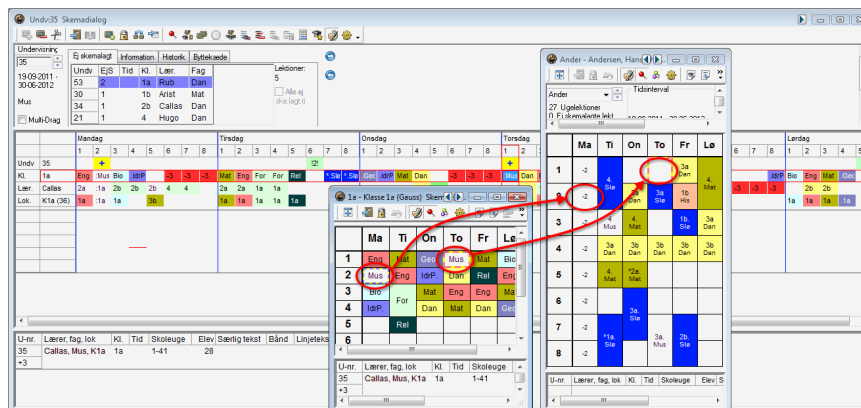
The left half of the window displays the teacher(s) of the active lesson. The right half displays all the teachers available (based on their own timetables) to take on ALL the periods of the active lesson. The following additional details are provided to facilitate the decision-making process:

- Per/Wk: Number of periods per week taught by the teacher.
- UnSc: Number of those periods that remain to be scheduled
- Subject: Teacher already teaches this subject
- Tea. qual.: Teacher is qualified to teach this subject

The example shows that both „Gauss“ and „New“ are qualified to take on the lesson.



4. Click on teacher „New“ and check if the lesson would fit into the teacher’s timetable. Assign the lesson to the teacher by clicking on <Assign tea>.



4.4.18 Display functions

The functions described below can be used to change the scheduling dialogue display.

4.4.18.1 Displaying all teachers of a class

Place the cursor in a class row to display the timetables of all teachers involved in this class. Teachers not assigned to teach a class in this period are listed first, followed by uncoupled teachers.

Place the cursor in a teacher row to display the timetables of all classes in which the teacher is involved.



4.4.18.2 Displaying all elements

Use this function to display all classes, teachers and rooms in your school in the timetable rows of the scheduling dialogue. If you only want classes to be displayed, hold down the <Shift> key while calling up this function.

Place the cursor in a teacher row if you want all the teachers to be listed first (under the active lesson). In the same way, place the cursor on a room or class row if you want rooms or classes to be listed first.



4.4.18.3 Displaying a second

This function displays not only the active lesson, but also the lesson on which you have placed the cursor. The function also allows you to display additional information on the cursor-selected lesson.



4.4.18.4 Deleting rows

Use this function to delete all the rows in the timetable window below the cursor position. Please note that the active lesson will still be displayed on the screen.



4.4.18.5 Displaying lesson colour codes

The colours defined for master data elements and individual lessons can be activated and deactivated via the button <Show lesson colours>.



4.4.18.6 Settings

Instead of markers (x,X,& etc.), you can show the abbreviated names of the elements involved in a lesson by ticking the relevant box under <Settings>. The function also offers options for changing the font size and the height and width of cells (see the chapter „Flags“).

In addition, you can use the function to restrict the display to a specific range of periods (e.g. periods 1-8) and to keep the window in the background.



4.4.18.7 Displaying arbitrary elements

To call up the timetable of any element or lesson, simply enter the name of the element or the lesson number in any part of the timetable window and press <Tab> or <Enter>.

For example, enter the abbreviated name of Sports Hall 1, SH1, on the timetable. The software responds by displaying the room availability.

Mandag								
	1	2	3	4	5	6	7	8
Undv	56	+						
Kl.	3a	:His	Eng					
Lær.	Rub	:3a	4					
Lok.	K3a	:3a	3a					
		Id1						

Mandag								
	1	2	3	4	5	6	7	8
Undv	56	+						
Kl.	3a	:His	Eng	JdrP	IT	Mat		Bio
Lær.	Rub	:3a	4	:3a	:1a	1b		
Lok.	K3a	:3a	3a	4	:3a	3a		3a
		Id1	4	:3a	:1a			

If you want to switch to another lesson but the availability of SH1 shall still be shown then you can lock this line (like any other line) via the button <Do not hide rows>. The element is now marked with a "+" in front of the name and it is displayed until you remove it by clicking on the button <Hide selected rows>.



Mandag								
	1	2	3	4	5	6	7	8
Undv	56	+						
Kl.	3a	:His	Eng	JdrP	IT	Mat		Bio
Lær.	Rub	:3a	4	:3a	:1a	1b		
Lok.	K3a	:3a	3a	4	:3a	3a		3a
		-Id1	4	:3a	:1a			

4.4.19 Shortcut keys

Most of the scheduling dialogue functions can be activated via shortcut keys (i.e. without the use of the mouse).

Use <Ctrl> -<Tab> to switch between individual windows within Untis.

When the scheduling dialogue is open, a purple rectangle highlights the active part of the scheduling dialogue. In the example below, the active cell is marked with a red circle.

Ej skemaagt	Information	Historik	Byttekæde
Undv	EjS	Tid	Kl. Lær. Fag
21	1	4	Hugo Dan
30	1	1b	Arist Mat
34	1	2b	Callas Dan
53	2	1a	Rub Dan

Mandag								
	1	2	3	4	5	6	7	8
Undv	56	+						
Kl.	3a	:His	Eng	JdrP	IT	Mat		Bio
Lær.	Rub	:3a	4	:3a	:1a	1b		
Lok.	K3a	:3a	3a	4	:3a	3a		3a
		-Id1	4	:3a	:1a			

U-nr.	Lærer, fag, lok	Kl.	Tic
74	Curie, IdrP, Id2	4	
	New, IdrD, Id1	4	

Switch between the different parts of the window using <F6> or <Shift>-<F6>.

In the upper part of the scheduling dialogue, use <Alt> -<Left Arrow> and <Alt> -<Right Arrow> to move from tab to tab. Within a tab, use the <Tab> key to move between individual elements.

In the middle part of the scheduling dialogue, use the cursor keys to control the cursor. In addition, the following key combinations are available:

<Ctrl> - <Right Arrow>: last period of the week
 <Ctrl> - <Left Arrow>: first period of the week
 <Alt> - <Home>: first period of the day
 <Alt> - <End>: last period of the day

<Ctrl> - <Arrow Up>: first row
 <Ctrl> - <Arrow Down>: last row
 <Alt> - <Right Arrow>: next day
 <Alt> - <Left Arrow>: previous day

The different scheduling dialogue functions can be called up via the following shortcut keys:

<Insert>: Schedule period
 <Delete>: De-schedule period
 <Ctrl> - <X>: Delete, activate lesson
 <F7>: Lock period
 <Ctrl> - <Enter>: New active lesson
 <Ctrl> - <R>: Room dialogue
 <Ctrl> - <Shift> - <Enter>: 2nd active lesson
 <F8>: Alternative room

4.5 Swapping periods

In addition to the period swap function using Drag&Drop, the scheduling dialogue (and to a limited extent, the scheduling timetable) offers additional functions for swapping already scheduled periods. Use these functions when the timetable requires further improvements.

- Suggested swaps
- Consecutive swaps
- Chained swaps

4.5.1 Swap suggestions

This function offers swap suggestions for a cursor-selected period on a class timetable. To this end, Untis evaluates the timetable based on your weighting settings and informs you if the quality of the timetable would be increased or decreased as the result of a swap.

Open this function by clicking on the <Suggested swaps> button in the scheduling dialogue.



Any period swaps you make can be undone via the <Undo> button in the „History“ tab.

1. Open the file demo.gpn, call up the scheduling dialogue and open a class and a teacher timetable.
2. Select the class timetable for the class 3a and click on Mon-5.

You want to move the Math lesson of class 3a (lesson 1) on Monday, period 5, to an earlier slot, if possible.

As you can see in the scheduling dialogue, only Fri-5 and Sat-5 are available slots for moving. Consequently, the move would decrease the quality of the timetable.

- Place the cursor on Mon-5 in the scheduling dialogue and click on <Suggested swaps>.

Untis now offers three different options (see example on the following page):

- Display of all 2-way swaps (swaps involving 2 swap partners)
- Display of all 3-way swaps (swaps involving 3 swap partners)
- Display of all 2-way and 3-way swaps

Per default, the software displays 2-way and 3-way swaps.

The swap suggestion window now displays a list of all possible 2-way and 3-way swaps, sorted by quality (best swap option first).

Swap suggestions highlighted in green denote options that would improve the timetable. Suggestions shaded red denote a decrease in timetable quality.

- Click on the first swap suggestion.

Red arrows mark the swap option on the timetable. In the example, they show that the Math lesson would be moved to Mon-1, the History lesson to Sat-1 and the GEc lesson to Mon-5. The teacher timetables show the corresponding period swap for the teachers involved in the lessons.

The swap positions in the timetable window of the scheduling dialogue are marked A, B and C.

- Click on <Swap> to confirm the swap.

The screenshot displays the Untis scheduling software interface. It features several windows:

- Ungrensning:** A window showing lesson assignments for '19-09-2011 - 30-06-2012' with columns for subject (E, S, T, R, S, O), teacher (L), and room (K).
- 3a - Klasse 3a (Aristoteles):** A main timetable window with days (Ma, Ti, On, To, Fr, Lø) and periods (1-8). Red arrows point to specific lesson slots.
- Bytteforslag:** A window listing suggested swaps between lessons, including details like subject, teacher, and room.
- U-nr. Lærer, fag, lok.:** A window showing the specific swap details for the selected option.

In practice, you may want to move a lesson to a different slot on the timetable already occupied by another lesson. This lesson would be displaced and would have to be moved to yet another slot. The same swap rules apply to the second lesson: either the software finds a suitable slot for the lesson on the timetable or the lesson will displace yet another lesson. This chain of events will continue until a suitable slot has been found for every lesson.

Untis supports this intuitive planning method with the functions „Consecutive swaps“ and „Chained swaps“.

The main difference between the two swap functions is that consecutive swaps can be carried out using Drag&Drop and also allow period swaps across classes.

4.5.2 Consecutive swaps

Carry out consecutive swaps in either the scheduling dialogue or in the scheduling timetable using Drag&Drop. This is similar to working with a peg board. You schedule a lesson by displacing another lesson, activate the lesson you have displaced and schedule it in a different slot, activate the next lesson you have displaced (if any) and schedule it in yet a different slot, etc.

1. Load the file demo.gpn and open the scheduling dialogue and a class timetable.


You want to move the PE lesson (no. 73) of class 1a on Fri-8 to a better (earlier) slot on the timetable.

2. Try dragging the lesson to a different position on the timetable.

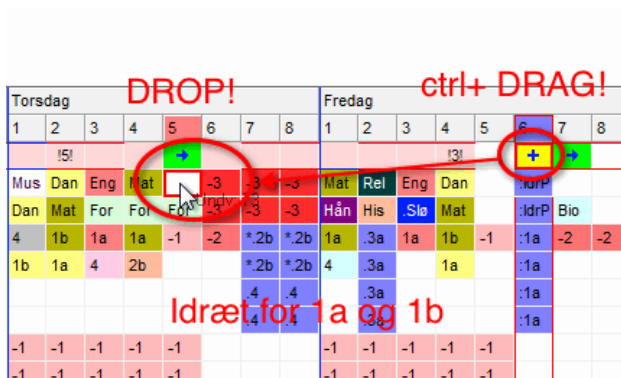
	Ma	Ti	On	To	Fr	Lø
1	Eng	Mat	Geo.	Mus	Mat	Bio
2	Mus	Eng	IdrP.	Dan	Rel	Eng
3	Bio	For	Mat	Eng	Eng	Mat
4	IdrP.	For	Dan	Mat	Dan	Geo.
5		Rel				
6					IdrP.	
7		*Slø.				
8		*Slø.			IdrP.	

You will see that the only available slots are the lunch break on Tuesday and period 5 on Saturday. Neither are ideal options.


3. Drag the lesson in the scheduling dialogue away from its slot on Fri-8 and simultaneously hold down the <Ctrl> key.

The software displays the symbol  on all slots where the lesson would be blocked by only a single element. For instance, if both the class and the teacher of the lesson to be scheduled in this slot are already involved in different lessons, two lessons would be displaced and the chain would be disrupted.

4. Drop the PE lesson (still holding down the <Ctrl> key) on Thu-5. This slot is blocked by lesson 2 (Callas, AR, 1b). You will not be asked if you want to create a conflict.



Torsdag								Fredag							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Mus	Dan	Eng	Mat	IdrP.	IdrP.	IdrP.	IdrP.	Mat	Rel	Eng	Dan	IdrP.	IdrP.	Bio	
Dan	Mat	For	For	For	For	For	For	Hån	His	Slø	Mat				
4	1b	1a	1a	-1	-2	*2b	*2b	1a	3a	1a	1b	-1	-1a	-2	-2
1b	1a	4	2b			*2b	*2b	4	3a	1a			-1a		
													-1a		
													-1a		
-1	-1	-1	-1	-1				-1	-1	-1	-1	-1			
-1	-1	-1	-1	-1				-1	-1	-1	-1	-1			


The PE lesson will now be scheduled in this position and lesson 2, the lesson originally placed in this slot, automatically becomes the active lesson. Drag this lesson to another position marked  and drop it, thereby continuing the chain, or alternatively place the lesson on a suitable unoccupied slot.


Keep the <Ctrl> key pressed, otherwise the swap is interrupted and cannot be continued.

5. A suitable slot for this lesson is Sat-1 where lesson 2 can be scheduled without causing a conflict (as indicated by the !1 symbol). This completes the swap chain.

The screenshot shows a scheduling grid with columns for Thursday, Friday, and Saturday. A red arrow labeled "Ctrl+Drag!" points from a yellow cell containing a "+" sign on Thursday (row 5, column 5) to a green cell containing a "!1" symbol on Saturday (row 1, column 1). Another red arrow labeled "Drop!" points to the "!1" cell. The text "Art in 1B" is overlaid in red. The grid contains various lesson names and numbers, such as "Call", "Rub", "Aris", "Calle", "Ar", "Curii", "And", "Anc", "Cer", "EN", "MA", "DE", "1a", "1b", "2", "3", "4", "5", "6", "7", "8", "9", "10", "11", "12", "13", "14", "15", "16", "17", "18", "19", "20", "21", "22", "23", "24", "25", "26", "27", "28", "29", "30", "31", "32", "33", "34", "35", "36", "37", "38", "39", "40", "41", "42", "43", "44", "45", "46", "47", "48", "49", "50", "51", "52", "53", "54", "55", "56", "57", "58", "59", "60", "61", "62", "63", "64", "65", "66", "67", "68", "69", "70", "71", "72", "73", "74", "75", "76", "77", "78", "79", "80", "81", "82", "83", "84", "85", "86", "87", "88", "89", "90", "91", "92", "93", "94", "95", "96", "97", "98", "99", "100".

The PE lesson has now been moved from Fri-8 without requiring the de-scheduling of another lesson.

Slots marked with the symbol  when a period is dragged away denote positions where a period swap is possible.

The symbol  signals that a period can be scheduled in this position without displacing another lesson. The lower the value in the symbol, the better the position for scheduling the period.

	Ma	Ti	On	To	Fr	Lo
1	Eng	Mat	Geo.	Mus	Mat	Bio
2	Mus	Eng	IdrP.	Dan	Rel	Eng
3	Bio		Mat	Eng	Eng	Mat
4	IdrP.	For	Dan	Mat	Dan	Geo.
5		Rel		IdrP.		
6						
7						
8		Slo.				

Please note that consecutive swaps may be carried out across different classes. The only restriction is that the swap path for the continuation of a chain must always be unique. Where there is a fork in the path (e.g. both teacher and class are already scheduled elsewhere), the software will ask you how you want to proceed (create a conflict, cancel etc.) and the chain must be restarted at that point.

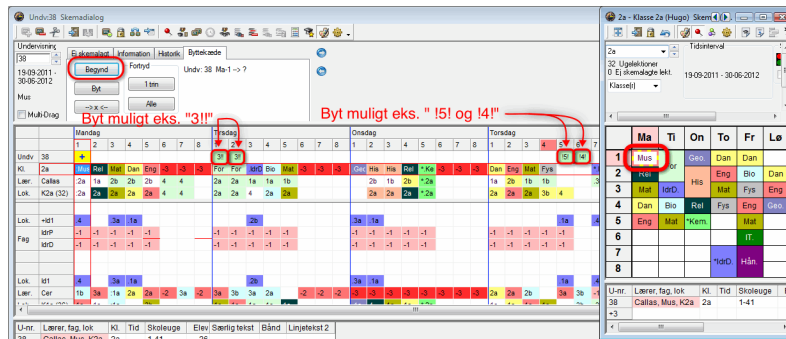
4.5.3 Chained swaps

The chained swaps function is accessible via the <Chained swaps> button in the scheduling dialogue.

1. Start the file demo.gpn and open the scheduling dialogue and a class timetable.
2. Activate lesson 38 and place the cursor in the row „2a“ on Mon-1.

The aim of this exercise is to swap the cursor-defined lesson (lesson 38, Callas, MU, 2a) with a lesson in a different slot.

3. Start the swap chain by clicking on <Start> on the „Chained swaps“ tab.

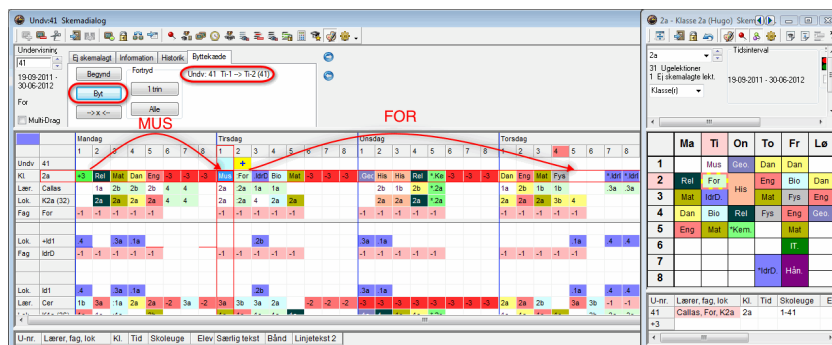


The lesson row now displays a series of number symbols in some of the cells in the time grid. These represent possible swap positions. The lower the value, the better the position. Two exclamation marks behind the number (e.g. !2!) signify that a swap to this position would displace a lesson already scheduled for this slot. An exclamation mark before and after the number (e.g. !1!) indicates that a swap would not cause a displacement of another period, completing the swap chain (see example on the following page).

You want to move lesson 38 (Callas, 2a, MU) from Mon-1 to Tue-1. This means that one period of lesson 41 (Callas, 2a, AR) will be displaced.

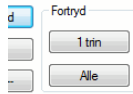
4. Place the cursor on Tue-1 and click on <Swap>.

The original period of lesson 38 has now been moved to Tue-1. The change is also reflected on the timetable. Lesson 41 with one displaced period automatically becomes the active lesson.



Again, Untis marks suitable swap positions with numbers displayed in the lesson row.

If you are dissatisfied with the swap results, you can undo individual steps of the process and even the entire swap chain.



You want to schedule the displaced period of lesson 41 for Sat-1. The symbol **!!** indicates that the swap would not cause the displacement of another period (i.e. the swap chain would be completed).

5. Place the cursor on Sat-1 and click on <Swap>.

Lesson 41 (Callas, 2a, AR) displaced from Tue-1 has been moved to Sat-1. The swap chain is now complete.

Please note that function „Chained swaps“ only supports swaps that do not result in a significant decrease in timetable quality (based on the weighting settings you have entered). This means that only the swap partners identified in the lesson row can be used for swapping.

	Ma	Ti	On	To	Fr	Lø
1		Mus	Geo	Dan	Dan	
2	Rel	For		Eng	Bio	Dan
3	Mat	IdrD	His	Mat	Fys	Eng
4	Dan	Bio	Rel	Fys	Eng	Geo
5	Eng	Mat	*Kem.	For	Mat	
6					IT	
7				*IdrD	Hån.	
8						

4.6 Scheduling half periods

The Untis programme can also be used to schedule half periods.

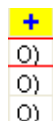
- Open the file Demo4.gpn.
- Activate lesson 39 (Callas, AR, 1a).

This lesson with 2.5 periods is scheduled for Monday, periods 1 to 3. The half period is scheduled for the second half of period 1. The scheduling dialogue displays the marker (O for this half period.

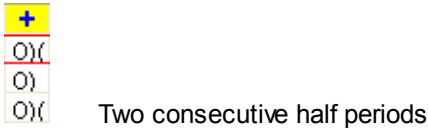
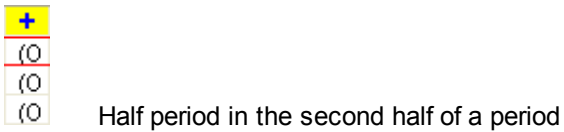
Open the timetable of class 1b and activate Monday, periods 4 and 5. Here, the half period is scheduled for the first half of the period. The scheduling dialogue displays the marker O) for this half period.

For two consecutive lessons of half a period each (such as on Friday, periods 3 / 4 for class 1b), the scheduling dialogue displays the marker O)(.

When working with half periods, the following markers can appear in the scheduling dialogue for the active lesson:



Half period in the first half of a period

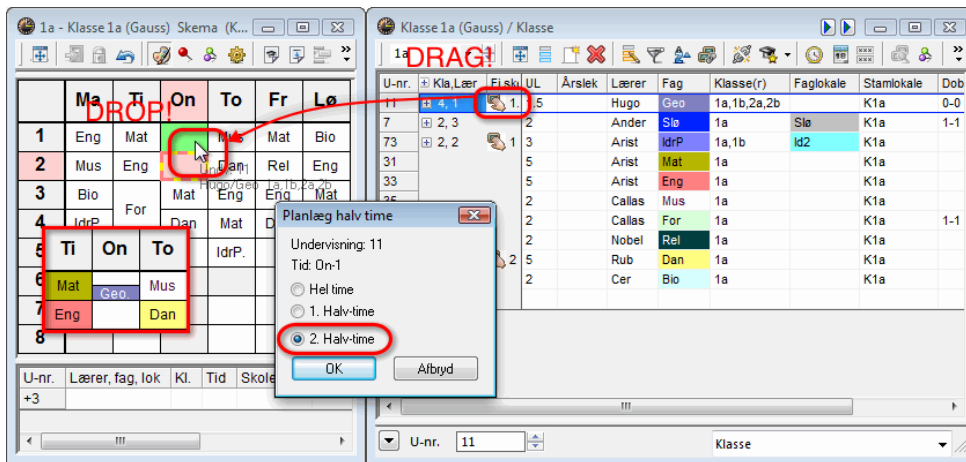


4.6.1 Scheduling half periods in the timetable


1. Open the file Demo4.gpn.
2. De-schedule all periods via „Scheduling | Delete the Timetable“.
3. Schedule the first unscheduled lesson of class 1a for Mon-1 via Drag&Drop from the lesson window.

When dropping the lesson on the timetable, a dialogue box appears asking you how you want to schedule the half period – as an entire period or as a half period before or after the block (see example).

4. Schedule the half period before the block.

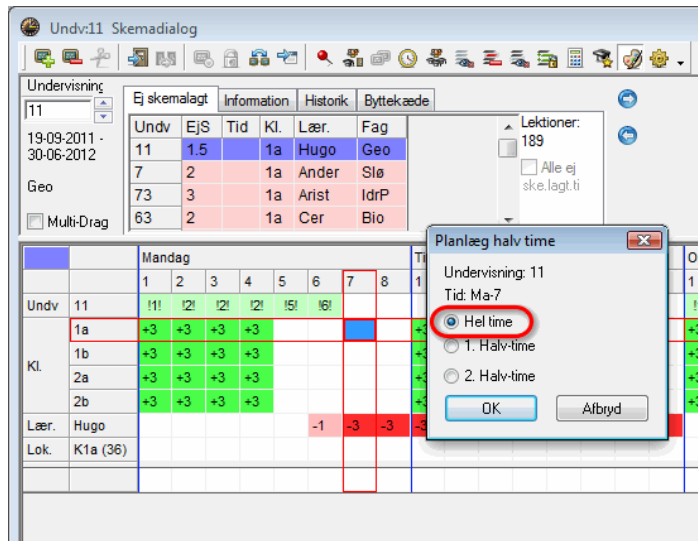


4.6.2 Scheduling in the scheduling dialogue

1. Open the file Demo4.gpn and de-schedule all periods (via „Scheduling | Delete the Timetable“).
2. Select the unscheduled lesson 73 from the „Unscheduled“ tab.
3. Schedule the lesson for Wed-7 by double clicking or by clicking on the button .

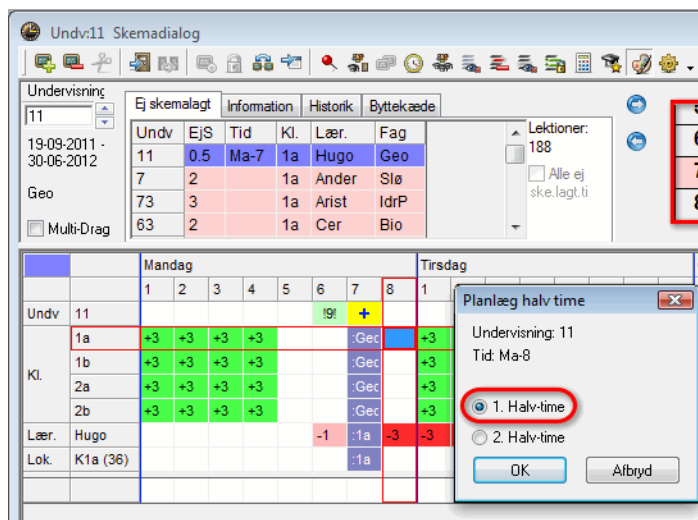
A dialogue window will appear where you can select which part of the period you want lesson 73 to occupy (1st half period, 2nd half period, whole period).

4. Select the whole period.



A whole period of the lesson will be scheduled. Now you need to schedule an additional half period.

5. Schedule the half period in period 8. You will be asked if you want the lesson to be scheduled in the first or the second half of the period.
6. Select „1st half period“ and click on <OK>.



The lesson with 1.5 periods will now take place on Wednesday, period 7 and the first half of period 8.

4.6.3 Manually scheduling half periods

Half periods can also be scheduled manually using the timetable, the scheduling timetable or the scheduling dialogue.

1. Open the file Demo4.gpn
2. De-schedule all periods (via „Scheduling | Delete the Timetable“ and change lesson 35 and 63 to half periods.

L-No.	Cl,Te.	Per	Teacher	Subject	Class(es)	Subject i	Home Room
35		0.5	Callas	MU	1a		R1a
63		0.5	Cer	Bl	1a		R1a

- Schedule lesson 35 via Drag&Drop on the timetable for the first half of Mon-1.
- Schedule lesson 62 via a class clash for the same period Mon-1, but for the second half of the period (see example).

The two lessons 35 and 63 with a half period each are now scheduled to take place on Monday, period 1, starting with lesson 35.

You can also schedule half periods in the scheduling dialogue (via class clashes). See the chapter „Scheduling periods with clashes“.

The screenshot shows the software interface for scheduling lessons. On the left is a timetable grid with columns for days (Ma, Ti, On, To, Fr, Lø) and rows for periods (1-8). Lesson 35 (Geo.) is scheduled in the first period of Monday. Lesson 63 (Slø.) is scheduled in the second period of Monday. In the center, a 'Gem blok' dialog box shows details for lesson 7 (Ma-1) and options for handling collisions. On the right, a 'Planlæg halv time' dialog box is open, with the '2. Halv-time' option selected and circled in red. A small inset grid in the bottom right corner shows the first two periods of Monday with lesson 35 in the first and lesson 63 in the second.

4.7 Multi-Timegrid

If you are using different time grids, the display in the scheduling dialogue depends on the active lesson. The time grid of the active lesson is also the active time grid. Periods of the active time grid that are completely or partly blocked by periods of the other time grid are marked with the symbol O. This applies for the scheduling timetable, too.

You can schedule lessons only in periods that are not blocked by periods of other time grids. Period swaps can be applied only in one time grid.

In our example teacher Cer teaches on Monday in the third period in the green time grid and in the second in the blue time grid. The precise length of time is displayed in the details window of the scheduling dialogue.

The screenshot displays the Untis scheduling software interface. The main window, titled "Les.:63 Scheduling Dialogue", shows a list of lessons with columns for Lesson No., Unscheduled, Time, Class, Teacher, and Subject. Below this is a grid for Monday and Tuesday. A red circle highlights the "EN" entry in the Monday 9:00-10:00 slot. To the right, a smaller window titled "Cer - Cervantes, Miguel" shows a weekly timetable for the same teacher. A red circle highlights the "3a EN" entry in the Monday 9:00-10:00 slot. The timetable window also shows a list of lessons at the bottom.

Les.	Uns	Time	Clas.	Tea.	Sub.
53	2		1a	Rub	DE
30	1		1b	Arist	MA
34	1		2b	Callas	DE
21	1		4	Hugo	DE

Mo	Tu	We	Th	Fr	Sa
1b BI	3a EN		2a DE	2a DE	1a BI
3a EN	3b BI		2a EN	2a BI	2a DE
1a BI	3a BI		2b BI	2b BI	2a EN
2a DE	2a BI			2a EN	4 EN
2a EN			3a EN		
			3b BI		
3a BI				1b BI	

L-No.	Tea.	Subj.	Rm.	Clas.	Time	Stud.	Special text	Cluste
63	Cer, BI, R1a			1a	9.50-10.35 (45)	28		
+3								

L-No.	Tea.	Subj.	Rm.	Clas.	Time
63	Cer, BI, R1a			1a	9.50-10.35 (45)

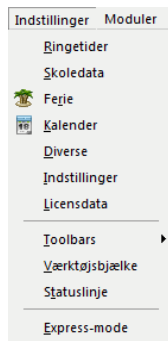
6 User Tips

6.1 User tips

This chapter describes additional options and useful settings not covered under master data and lessons. These should help you to take full advantage of Untis in working with your timetables.

6.2 Settings

Use the „Settings“ menu to enter various other useful settings. The most important of these will be introduced in the following section.

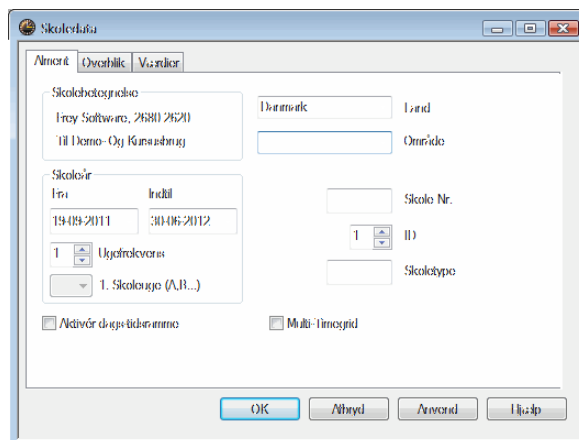


6.2.1 Time Grid

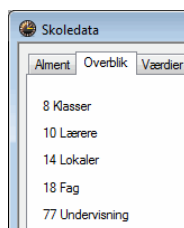
The functions of the time grid are described in detail in the brochure "Getting Started".

6.2.2 School data

Use the *School Data* window to enter details such as the start and end date of the school year, country, region and type of school. The details entered in this window are required for a number of different (statistical) processes and calculation methods.



The *Overview* tab provides an overview of the number of classes, teachers, rooms and lessons at your school.

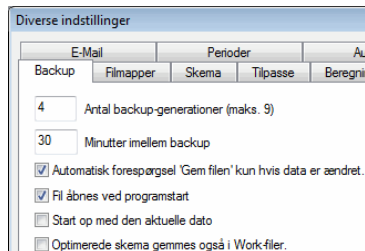


6.2.3 Miscellaneous Settings

6.2.3.1 The 'Auto-save' tab

The "Auto-save" tab

Use this tab to specify the time interval between automatic data saves and how many backup generations you want the software to archive. The settings in the example show, for instance, that Untis saves data every 30 minutes and creates four backup generations. The software saves the data in the files Save1.gpn, Save2.gpn, Save3.gpn and Save4.gpn with the most up-to-date data saved in the file Save1.gpn and the oldest data in the file Save4.gpn. We recommend that you check the option "Save only when the data has been changed" to avoid identical backup files.



When the option *Open with the last file used* is active, Untis automatically opens the file last edited when the programme starts up. Suppress this behaviour by pressing the <Shift> key during start up.

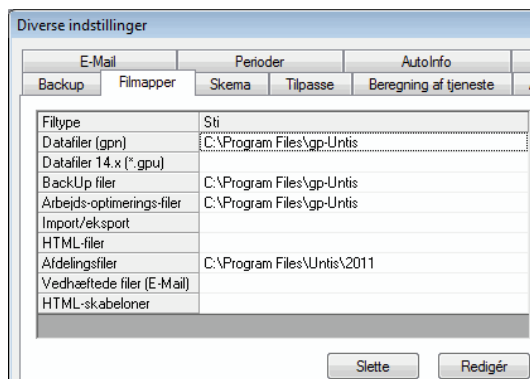
The option *Start with the current date* allows you to specify if windows containing date selection options should display the current date or the date when the file was last saved.

You can view the results of an optimisation run immediately in the optimisation dialogue. If this data is to be made available after Untis terminates you should check the box "Also save optimised plans in work files". This will save the results in so-called work files.

6.2.3.2 The 'Directories' tab

The 'Directories' tab

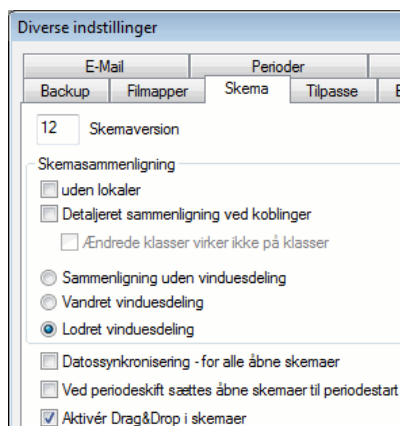
This tab allows you to specify various standard paths. We would recommend that you create your own directories for your backup and work files (i.e. the files containing the different timetables of your school saved during optimisation) and enter the paths on this tab.



6.2.3.3 The 'Timetable' tab

Karteikarte „Stundenplan“

The settings on this tab are relevant for a number of different timetable functions.



For instance, the timetable version number you can assign to each timetable version will be included on all printouts (see the chapter *Timetable construction*).

The different options for timetable comparisons are described in the chapter of the same name.

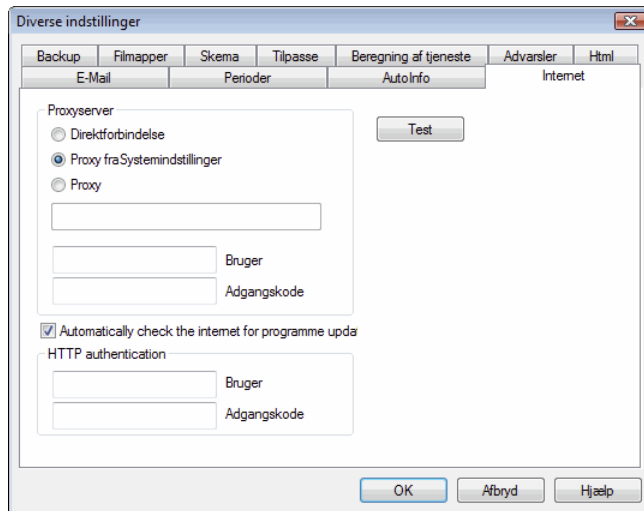
The *Synchronise dates* option allows you to specify if a date change implemented on one particular timetable should also apply to *all* other timetables open on the screen. This function is particularly useful for use with the *Multi-Week Timetable* and the *Multiple Term Timetable* modules.

The option "When switching terms, set the TT to the beginning of the term" is only active for use with the Multiple Term Timetable module. The last option "Activate Drag&Drop in the timetables" allows you to activate or deactivate the manual timetabling function.

6.2.3.4 The 'Internet' tab

The 'Internet' tab

Untis enables you to receive information about version updates. In addition to activating the option "Internet query for programme update", you must also specify how your computer accesses the Internet - direct or via a proxy server.



6.2.4 Licence Data

The input of licence data is described in detail in the brochure "Getting Started".

6.3 Time Requests

Time requests are an important element of the Untis timetabling software. Time requests can be entered for master data elements and for lessons. The button for this function can be found on the tool bar of the master data or lesson window.

Time requests are graded from "-3" (completely blocked) to "+3" (core time, a period must be scheduled).

There are two different categories of time requests – *specified time requests* and *unspecified time requests*. Specified time requests refer to specific days and periods. Unspecified time requests, by contrast, are requests where only the duration and the type of request (e.g. 1 day of "-3") are specified and where the selection of the day or period is up to the software programme.



6.3.1 Specified time requests

- Start Untis and load the file demo.gpn.
- Open the master data view for teachers ("Master Data | Teachers") and click on <Time Requests>.
- Switch to teacher *New* (Newton).

Rub

Ubestemt dagsønske

Ønsket vægt	Dage	Form.	Efterm.	Halvd.
-3	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
-2	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
-1	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Ubestemt spærring

Antal dage Fra/til lektion

	1	2	3	4	5	6	7	8	Dage	Form.	Efterm.
Mandag							-2	-2			
Tirsdag							-2	-2			
Onsdag									-3		
Torsdag											+3
Fredag											
Lørdag											

The window on your screen should now resemble the figure on the left. The following time requests are active:

Monday and Tuesday, periods 7 and 8: "-2". If possible, Newton should *not* have lessons scheduled in these periods.

Wednesday, all day: "-3". This means that Wednesday is definitely blocked, i.e. teacher Newton is not available to teach on Wednesdays.

Thursday (pm): „+3“. Newton wants to teach periods 6 – 8, if possible.

Please note that time requests for entire days and half-days can be entered on the right-hand side of the time grid (bottom part of window).

Assigning the time request „+1“ to days Thu - Sat, periods 1-3.

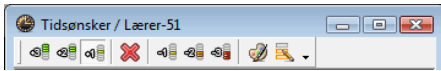
- Click on "+1"
- Highlight the area Thu - Sat, periods 1-3.

	1	2	3	4	5	6	7	8	Dage	Form.	Efterm.
Mandag							-2	-2			
Tirsdag							-2	-2			
Onsdag									-3		
Torsdag	+1	+1	+1								+3
Fredag	+1	+1	+1								
Lørdag	+1	+1	+1								

You have entered the time request "+1" for Thu - Sat, periods 1-3 for teacher New.

Please note that the button for time request "+1" remains active until you deactivate the function by clicking on it. This means that you can enter further "+1" time requests at this time by clicking on the

relevant periods in the timegrid.



Delete time requests for certain periods or blocks of periods by highlighting the cells and clicking on <Delete>.



6.3.2 Unspecified time requests

- Switch to teacher *Rub* (Rubens) using the previous time request example.

Assumption : teacher Rub is a part-time teacher and therefore entitled to a free day per week. If possible, the teacher would also like two additional free afternoons.

Enter the following data under unspecified time requests:

- Enter "1" in the row "-3" under „Days“. This instructs the optimisation tool to schedule one free day for teacher Rub.
- Enter "2" in the row "-2" under "p.m.". The optimisation tool attempts to schedule two additional free afternoons for teacher Rub.

Ønsket vægt	Dage	Form.	Efterm	Halvd.
-3	1	0	0	0
-2	0	0	2	0
-1	0	0	0	0

Unbestemt spærring

0	Antal dage	Frå/til lektion

Enter time requests for half-days in the column "Halves". The optimisation tool decides whether to schedule the half-day in the morning or the afternoon.

Note

Use unspecified time requests whenever possible to allow the optimisation tool as much flexibility as possible.

Note

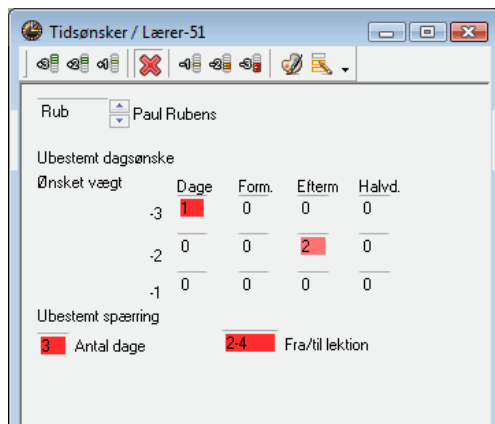
Specified and unspecified time requests are cumulative. If Tuesday is blocked with a time specified time request and an unspecified time request is entered with a priority of "-3" to keep a full day free, two complete days will be without periods - Tuesday plus an additional day.

In addition to the above, you can enter *unspecified blocked periods* for each element. The example

shows a time request for teacher Gauss. He would like three free periods (specifically periods 2 - 4) on three days of the week.

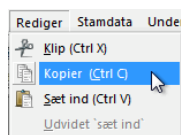
Tip

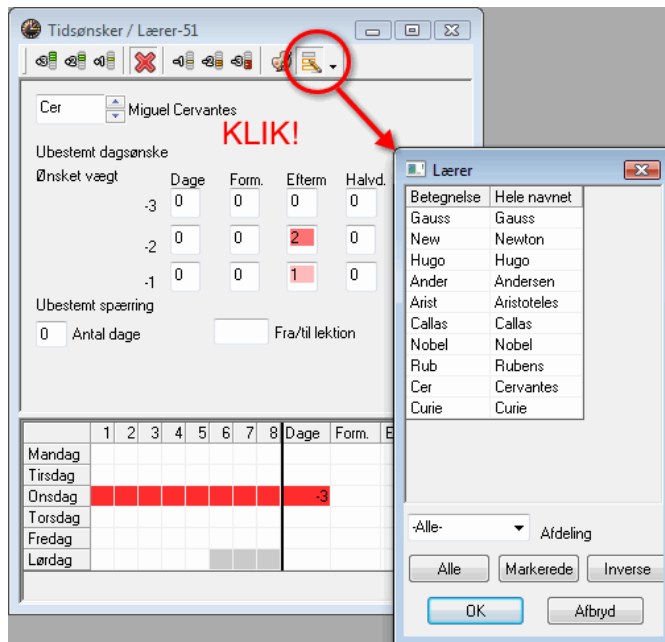
Time requests can be entered directly in the scheduling dialogue (see chapter "Scheduling dialogue" for more details).



6.3.3 Copying time requests

You can copy the time requests of an element to the clipboard and paste them in different elements. It is also possible to copy all the time requests of an element to any other in the time request window using the <Serial Change> option.



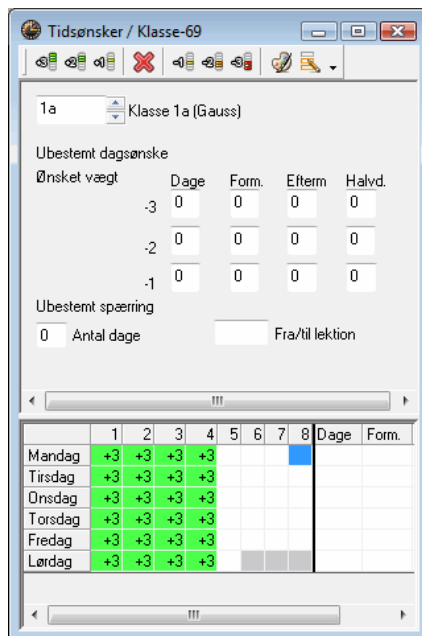


6.3.4 Deleting time requests

You can also use the <Serial Change> option to delete all time requests. Remove all time requests from one element and then copy and paste these settings to all other elements where you wish to delete time requests.

6.3.5 Core time

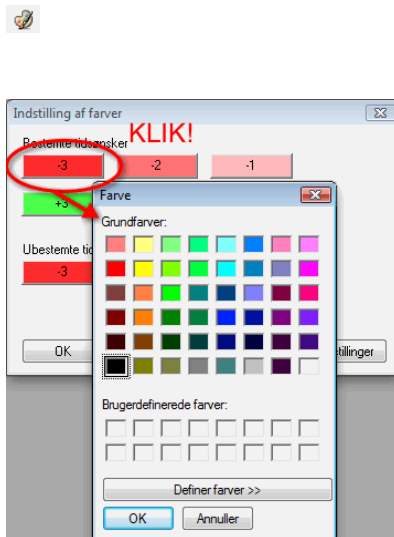
If you would like gp-Unti to schedule morning lessons first, enter a time request of "+3" for some of the morning periods (usually the first 4) under classes. Use the <Change> function described above.



The time request "+3" defines the so-called core time. The optimisation tool must schedule periods in the defined core time range, if at all possible. The Untis optimisation algorithm regards a core time violation as a serious offence. Such violations are displayed in the optimisation window and as individual diagnosis points. Please make sure that the number of core time periods entered for an element is smaller than (or equal to) the number of periods defined for the element.

6.3.6 Colour codes

Use this function to customise the colour codes used to highlight the different time requests on the timetable or in the scheduling dialogue individually.



6.4 Lunch breaks

You can specify the exact times of a lunch break between morning and afternoon lessons for classes and teachers using the *time grid*.

You have the following lunch break options:

- Specify a uniform lunch break for the entire school (e.g. 12:00 - 13:00).

In the time grid, enter 12:00 as the time when the last morning lesson should end and 13:00 as the time the first afternoon lesson should start. The software will treat the time between 12:00 and 13:00 as a lunch break (not as a period).

- Specify element-specific lunch break blocks (time request "- 3").
- Include the lunch break in the timetable construction.

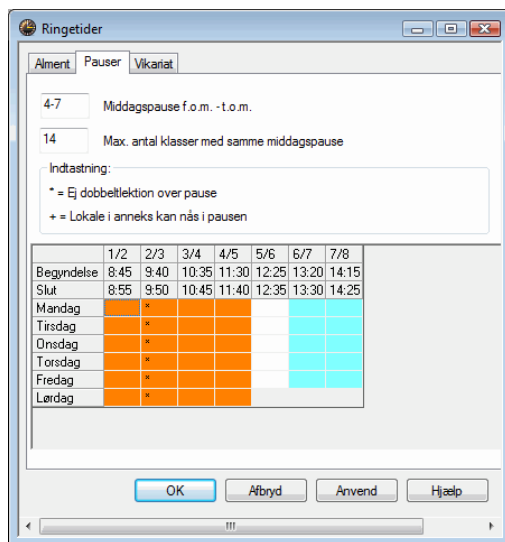
This last lunch break scheduling option allows for a better use of subject rooms. The option enables you to specify different lunch break durations for individual teachers and classes. Enter "1,2" in the box *Lunch break Min,Max* to instruct the software to schedule either 1 or 2 lunch break periods for the selected element.

Based on the weighting, the lunch break will be scheduled during the last morning periods and/or the first afternoon periods.

On a timetable with 5 morning periods and 4 afternoon periods, a two-period lunch break will be scheduled either for

- periods 4 and 5,
- periods 5 and 6, or
- periods 6 and 7.

Vary the time during which a lunch break can be scheduled by specifying the first and the last period when a lunch break may be scheduled (on the „Breaks“ tab in the *time grid*). The boundary between morning and afternoon lessons must lie within the specified time interval (see figure below).



If your school cafeteria has a limited capacity, use the same tab to enter the maximum number of classes that can have a lunch break at the same time (figure on the left).

Violations against specified lunch break times are displayed in the diagnosis window.

Avoid undesirable lunch breaks for teachers and classes by activating the code "(L) Lunch break = NTP" (non-teaching period) for the selected element.

6.5 Couplings

The composition of *couplings* have a major effect on the quality of a timetable. Unfavourable couplings can prevent the construction of a high-quality timetable. The following criteria are important for the creation of couplings.

6.5.1 Teacher teams

Teacher teams are required, for instance, in PE lessons where a class is divided into a male and a female group. Each group requires its own teacher, and both teachers must always be scheduled at the same time. If the teacher of the girls' PE lesson has already been scheduled to teach this group at a given time, the boys' PE teacher cannot be scheduled to teach a different subject or a different class at this time..

As a general rule, it is desirable to keep the number of teacher teams as small as possible, and to ensure that individual teachers are only part of a teacher team if absolutely necessary (see the example

at the end of this chapter).

To help you organise your teacher teams, Untis provides a "Teacher team" list where you can view all teacher teams at a glance.

Access the list via one of the two following options:

1. Click on <Print> or <Print Preview> in the "CCC Analysis" window, or



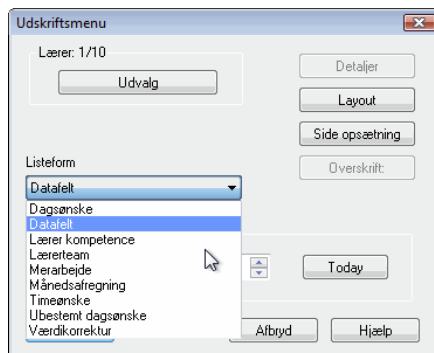
2. Select the relevant print list from the "Print selection" dialogue under "Master Data | Teachers" (only available with the "Lesson Planning" module).



Method 1 provides direct access to the list of teacher teams.

Using method 2, you first need to open the "Print selection" dialogue by clicking on <Print> or <Print Preview> in an active master data window for teachers. You can then change other settings in this window.

Click on the selection window "Type of list" to obtain a list of all print lists available in connection with teacher master data. Select the list "Teacher teams" (the <Selection> button normally used to select individual teachers is irrelevant for the "Type of list" function and is therefore greyed out).



The following figure shows an example of such a list.

1 Lærerteam

Betegnelse	Ma	Ti	On	To	Fr	Lø
	12345678	12345678	12345678	12345678	12345678	12345
Calas					- - - - - 3 3 3 3 3 3 3 3	
Gauss						
Anders	- - - - - 2 2 2 2 2 2 2 2					
Rub						
Hugo		- - - - - 3 3 3 3 3 3 3 3			+++ 3 3 3	
Nobel			+++ 2 2 2 2 2 2 2 2		- - - - - 2 2 2 2 2 2 2 2	- - - - - 2 2 2 2 2 2 2 2
?-1						

6: 1 / Kemi, Mat, Eng, Dan,

2 Lærerteam

Betegnelse	Ma	Ti	On	To	Fr	Lø
	12345678	12345678	12345678	12345678	12345678	12345
Anders	- - - - - 2 2 2 2 2 2 2 2					
Gauss						
Curie						- - - - - 3 3 3 3 3 3

7: 2 / Slø, Hån,

3 Lærerteam

Betegnelse	Ma	Ti	On	To	Fr	Lø
	12345678	12345678	12345678	12345678	12345678	12345
Arist		- - 1 2	- - 1 2	- - 1 2	- - 1 2	- 1
Rub						

73: 3 / IdrP, IdrD,

75: 3 / IdrD, IdrP,

76: 3 / IdrP, IdrD,

The printout shows:

1 The total number of different teams. The general rule is: the fewer, the better.

2 The lessons (including details) in which a team is involved. The general rule is: the more, the better.

3 The time requests entered for the individual teachers in the team. If a number of different time requests need to be taken into consideration, the timetable quality will deteriorate as a result since a teacher team can only be scheduled when all the teachers of the team are available.

Obergruppe A				Obergruppe B			
Gruppe 1		Gruppe 2		Gruppe 3		Gruppe 4	
1a	1b	1c	1d	1e	1f	1g	1h

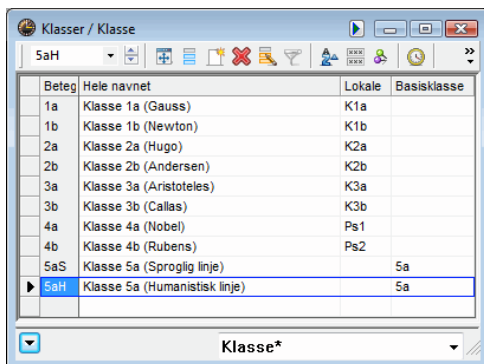
In the example above, class 1a in a two-class coupling should only be coupled with class 1b; in a four-class coupling only with classes 1b, 1c and 1d.

6.6 Type-separated class components

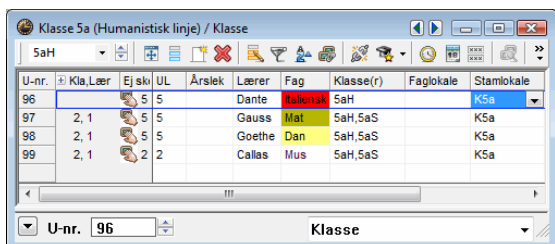
For organisational reasons, one class sometimes consists of two type-separated class components.

For example, class 5a could consist of a Modern Languages and a Classics component. While the former component has an Italian lesson scheduled, the latter component could have a Greek lesson. In this case, proceed as follows:

- Define two classes - 5aC for the Classics component and 5aM for the Modern Languages component.



- Enter the name 5a in the "Master class" field under master data of both classes.
- Couple the two class components for all lessons attended by the students of both groups.



U-nr.	Kla_Lær	Ej ski	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale
100			5	5	Plato	Old	5aS		K5a
97	2, 1		5	5	Gauss	Mat	5aH,5aS		K5a
98	2, 1		5	5	Goethe	Dan	5aH,5aS		K5a
99	2, 1		2	2	Callas	Mus	5aH,5aS		K5a

- The timetable of both class components can then be combined in a single view. In the example below, the combined class name *5aCM* is used for all lessons attended by students of both class components (see the chapter „Timetable construction“).

Note

You can deactivate this behaviour for individual timetable formats by checking the box "Display main classes separately" in the "Layout 2" tab under <Timetable settings>

Untis 2011 Skema 2011/2012 Frey Software, 2680 2620 14-07-2010 10:46
12 Gælder fra: 10. oktober Til Demo- Oq Kursusbrug K1a1

5a Klasse 5a (

	Ma	Ti	On	To	Fr	Lø
1		Mat.		Italien		
2		Dan.	Mat.	Mat.	Italien	Old
3		Mus.	Ol	Ita	Dan.	Dan.
4		Ol	Ita	Dan.	Old	Mat.
5			Mus.		Old	Italien
6						
7						
8						

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6.7 Class groups

By default setting, the Untis standard software package optimises school timetables for schools based on class structure, i.e. where each student is assigned to one particular class and the lessons scheduled for the student are determined completely by his or her class.

Another type of system involves *free course choice* where students can choose elective subjects (within certain legal limits) and classes and year groups no longer exist. This type of school system allows students to choose his or her own courses which means it is no longer the class that is the focal point of the timetabling efforts, but the student. This timetabling situation can be managed with the aid of the Untis *Course Scheduling* module.

Some school systems, such as some German Realschulen, Austrian teacher training colleges and British secondary schools, use a combination of the two extremes described above. In these schools, some lessons are attended by the entire class (*core lessons, main subjects*) while others represent so-called differentiation subjects (*intensive lessons, minor subjects, options*) that are attended by a fixed group of students from different classes. Each student's lessons are therefore determined by the student's choice of main and minor subjects. The following section describes how to deal with this timetabling situation using class groups.

The following example demonstrates the general principles of class groups.

Class C1 consists of 20 students subdivided into two groups of 10 students each. One group consists of

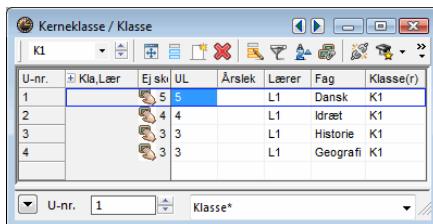
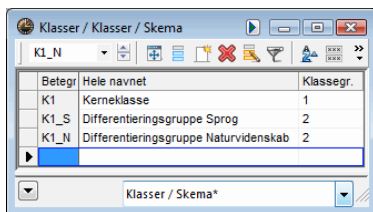
students with an interest in modern languages, the other of the students with an interest in science. *All* 20 students attend *the* same lessons for English, PE, History and Geography. However, while one group attends German, French and Italian lessons, the other group has Physics, Chemistry and Maths, instead.

This means that German can be scheduled at the same time as Chemistry or Maths since Modern Languages students do not attend Science classes. On the other hand, German, Chemistry and Maths must not be scheduled at the same time as English or PE since these are core subjects attended by *all* the students of the class.

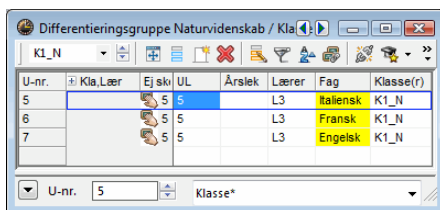
You can use Untis to solve this problem as follows:

6.7.1 Defining core lessons and options

Under "Master Data | Classes", define a core class *C1* and two differentiation groups *C1_M* (Modern Languages) and *C1_S* (Sciences).



Lessons of core class *C1* involves *all of the students* of the class while lessons of differentiation groups involve only the students belonging to the particular group.



U-nr.	Kla_Lær	Ejski	UL	Årskl	Lærer	Fag	Klasse(r)
8		5	5	L2		Fysik	K1_S
9		5	5	L2		Matematik	K1_S
10		5	5	L2		Kemi	K1_S

Under "Master Data | Classes", enter the information that the class groups C1_M and C1_S consist of students from core class C1 using the *Class group code* (CG code): "1" meaning that the class is a core class, numbers greater than 1 (2 - 9) refer to the different class groups.

Befegn	Hele navnet	Klassegr.
K1	Kerneklasse	1
K1_S	Differentieringsgruppe Sprog	2
K1_N	Differentieringsgruppe Naturvidenskab	2

Please note that the same class group code must be entered for both class groups C1_M and C1_S. Use higher code numbers only when the students in your school can choose more than one elective course group.

Entering the correct codes instructs the Untis to schedule lessons for class groups C1_M and C1_S only when class C1 (i.e. the core class) is not scheduled to have lessons.

6.7.2 Illustrating the principle

The examples on the left and below and the following explanations demonstrate the situation in a German Realschule (in North Rhine-Westphalia):

Betegn	Hele navnet	Klassegr.
08A	08A	1
08B	08B	1
08C	08C	1
08D	08D	1
08fs	Kursus 08fs	2
08nb	Kursus 08nb	2
08sw	Kursus 08sw	2
08tc	Kursus 08tc	2
08ti	Kursus 08ti	2
09A	09A	1
09B	09B	1
09C	09C	1
09fs	Kursus 09fs	2
09nb	Kursus 09nb	2
09sw	Kursus 09sw	2
09tc	Kursus 09tc	2
09ti	Kursus 09ti	2
10A	10A	1
10B	10B	1
10C	10C	1
10D	10D	1
10E	10E	1
10fs	Kursus 10fs	2
10nb	Kursus 10nb	2
10sw	Kursus 10sw	2
10tc	Kursus 10tc	2
10ti	Kursus 10ti	2

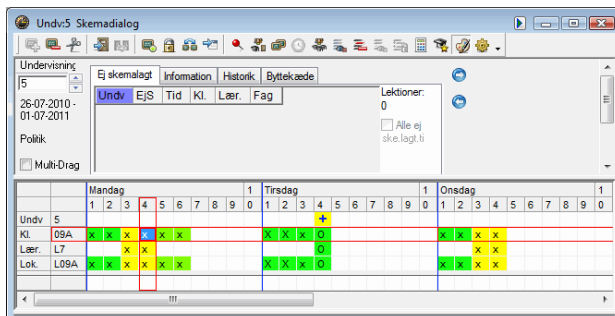
U-nr.	Kla.	Lær	Ej ski	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamiokale	Dobbeltlok.
1			4	4		L20	Dansk	09A		L09A	
2			4	4		L7	Engelsk	09A		L09A	
3			4	4		L1	Matematik	09A		L09A	
4			2	2		L14	Historie	09A		L09A	
5			2	2		L7	Politik	09A		L09A	
6	3, 4		2	2		L19	Religion	09A		L09A	
7	2, 4		2	2		L11	Idræt	09A,09B	ID_LO1	L09A	1-1
8	8, 4		2	2		L1	Hjemkundskat	09A,09B,C	KØK_LO1		1-1
9	8, 5		2	2		L20	Journalistik	09A,09B,C	SKR_LO1		1-1
9						L15	Journalistik	09A,09B,C	SKR_LO1		
9						L7	Journalistik	09A,09B,C	SKR_LO1		
9						L17	Journalistik	08A,08B	SKR_LO2		
9						L12	Journalistik	10A,10B,1	SKR_LO3		

Take a look at year 9. Each student of this year is assigned to one of the core classes 09A, 09B or 09C and attends undifferentiated core class lessons. Each class is therefore marked with the class group code "1".

The classes 09fs – 09ti highlighted in light green (full name "Course" in the above figure) are the differentiation groups (fs: French, ti: IT). Each student of core classes 09A - 09C can choose one of the elective subject groups 09fs – 09ti. Each class group is marked with the class group code "2".

Please note when using class groups that the order in which classes are listed under "Master Data | Classes" is **not arbitrary**. Core and differentiation classes of any one year must be listed in sequence, i.e. one below the other. A class group coded with a class group code **smaller** than that of the class listed immediately above denotes the beginning of a new, totally separate class sequence with completely different details (see the example above, e.g. between 08ti and 09A, or between 09ti and 10A).

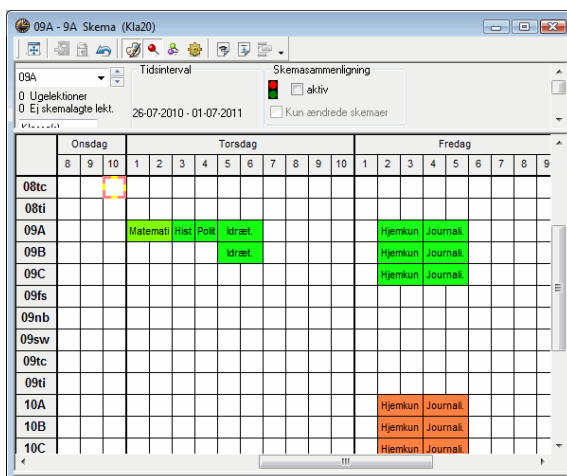
Lessons of classes coded with a class group code are marked as such in the scheduling dialogue. See the example below.



The symbol '=1=' on Tuesday, period 6, in the row of class 09A means that a class with the same class group code '1' is scheduled at the same time. (For this reason, a lesson should be scheduled for class 09A in this period, if possible).

Tuesday, period 1, contains the symbol '-2-'. This means that a lesson has already been scheduled for a class with the class group code '2' and that it is **not possible** to schedule a lesson for class 09A at this time without creating a **clash**.

Please also note that the additional class row for 09ti, which has a different class group code from that of class 09A, shows the complementary entries to class 09A: Mon-1 to Mon-6 are coded '-1-' for 09ti (scheduling not possible due to code '1'). Tue-1 to Tue-3, scheduled for 09ti, are coded '-2-' for 09A (scheduling not possible due to code '2').



6.7.3 Display and printing

The timetables of core and differentiation classes can be displayed neatly and clearly using overview timetable format 20.

Print the core and differentiation lessons of a class on a single timetable by accessing the master data field *Master class*.

Please note that Untis version 2006 and later allow you to assign several different master classes to a

class. The following example demonstrates the advantages of that option.

Betegr	Hele navnet	Stamskole	Hovedfag/dag	Fortløb H-fag	Klassegr.	Basisklasse
09A	9A	L09A	4	3 1		9a
09B	9B	L09B	4	3 1		9b
09C	9C	L09C	4	3 1		9c
09fs	Kursus 9fs	L09A			2	9a, 9b, 9c
09nb	Kursus 9nb				2	9a, 9b, 9c
09sw	Kursus 9sw	L09B			2	9a, 9b, 9c
09tc	Kursus 9tc				2	9a, 9b, 9c
09ti	Kursus 9ti				2	9a, 9b, 9c
10A	10A				1	

277The differentiation lessons of class groups 09fs, 09nb, 09sw, 09tc and 09ti are elective lessons for all students of core classes 09A, 09B and 09C. The three master class designations allow you to print complete timetables of all core classes including differentiation groups quickly and easily.

9c 9c

	Mo	Di	Mi	Do	Fr
1	09C GE L26 R09C	09n BI L13 R BI 09s SW L08 R09B 09fs PH L06 R09A 09tc PH L49 R_PH 09ti CH L02 R_C	09C PK L09 R09C	09C KR L34 R09C 09A ER L25 R08A	09fs CH L11 R_C 09n BI L13 R_BI 09s SW L08 R09B 09tc CH L40 R08E 09ti IF L14 R_IF
2	09C M L48 R09C	09fs F L44 R09A 09tc TC L49 R_TC 09ti PH L14 R_PH 09n BI L13 R_BI 09s SW L08 R09B	09C E L15 R09C	09C D L09 R09C	09fs F L44 R09A 09n CH L38 R_C 09s BI L01 R_BI 09tc TC L49 R_TC 09ti BI L18 R_BI
3	09C E L15 R09C	09fs BI L35 R_BI 09n CH L38 R_C 09s PH L06 R09B 09tc BI L01 R_BI 09ti IF L14 R_IF		09C M L48 R09C	09C SP L20 H_R1 09C SP L37 H_R2
4	09C D L09 R09C	09C M L48 R09C	09C D L09 R09C	09C E L15 R09C	
5	09C KR L34 R09C 09A ER L25 R08A		09C M L48 R09C	09fs F L44 R09A 09tc TC L49 R_TC 09ti IF L14 R_IF 09n PH L06 R_PH 09s CH L22 R_C	09C D L09 R09C
6			09C GE L26 R09C	09n BI L13 R_BI 09s SW L08 R09B 09fs F L44 R09A 09tc TC L49 R_TC 09ti IF L14 R_IF	09C PK L09 R09C

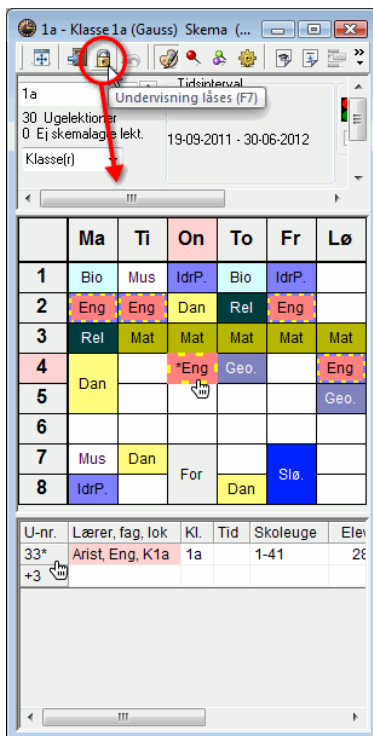
6.8 Locking

Before optimisation can run it is often necessary to lock certain periods, lessons or even master data elements in order to prevent the algorithm from making changes at the point in question.

6.8.1 Locking periods

When one or more periods have been manually set for a lesson they can be individually locked in the timetable by clicking on <Lock period>. This ensures that these periods will not be moved during optimisation. Locked periods are marked with an asterisk (*) in the timetable period window and in the period details window (see figure).

Deactivate the marking in the timetable period window by unchecking the "Label locked periods with a * mark" on the "Layout 2" tab under <Tiemtable Settings>.



6.8.2 Locking lessons

If all elements of a lesson are to be locked, activate "Lock (X)" for the lesson in question. A locked lesson will also be marked with an asterisk (*) in the timetable. Please note that you cannot remove this lock by clicking on the <Lock period> button.

The screenshot shows two windows. The left window, titled '1a - Klasse 1a (Gauss) Skema (...)', displays a weekly lesson schedule grid. The right window, titled 'Klasse 1a (Gauss) / Klasse', displays a list of lessons with columns for U-nr., Kla, Lær, Ej sk, Lås (X), UL, Årslek, Lærer, Fag, Klasse(r), Faglokale, Stamlokale, Dobbetlek, and Blok. A red circle highlights a checkmark in the 'Lås (X)' column for lesson 35. Red arrows point from this circle to the lesson 'Mus' in the schedule grid for period 7 on Monday and period 8 on Friday.

Note

If you lock a lesson for which all periods have not yet been scheduled, the missing periods will be set at the beginning of optimisation but they cannot then be moved (switched) subsequently by the algorithm. This results in **significantly worse optimisation**. For this reason, please only use this mark for lessons that have been fully scheduled.

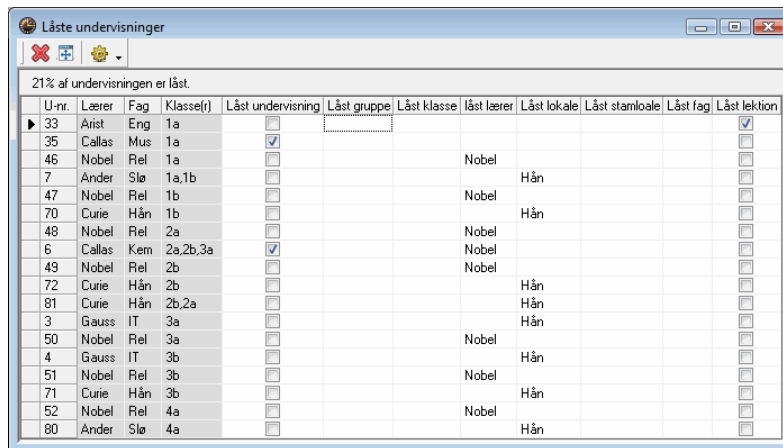
6.8.3 Locking master data

You can also lock certain master data elements if, for example, the limited number of periods of a part-time teacher are to be entered and locked manually. In this case, use the "Lock. (X)" field that is available in all master data views. Again, it is not possible to remove the lock from periods locked in this way using the <Lock period> button.

The screenshot shows four overlapping master data views: 'Lokale / Lokale', 'Lærere / Lærer', 'Fag / Fag', and 'Klasser / Klasse'. Each view has a 'Lås (X)' checkbox. Red circles highlight these checkboxes in each view. The 'Klasser / Klasse' view is the most prominent, showing a list of classes from 1a to 5aH. Below it, the 'Undervisningsgr...' window shows a list of teaching groups (UGE A, UGE B) with 'Lås (X)' checkboxes also highlighted by red circles.

6.8.4 Locked lessons window

As explained in the preceding chapters, locks can be entered in different ways in Untis. You can obtain a summary of all lessons locked in the school data by opening the "Lessons | Locked Lessons" window. The list of rows contains all the lessons which are currently locked from being moved. This columns indicate the window or the master data element where the lock was performed. You can use the the <Delete> button to remove individual locks.



21% af undervisningen er låst.

U-nr.	Lærer	Fag	Klasse(r)	Låst undervisning	Låst gruppe	Låst klasse	Låst lærer	Låst lokale	Låst stamloale	Låst fag	Låst lektion
33	Arist	Eng	1a	<input type="checkbox"/>							<input checked="" type="checkbox"/>
35	Callas	Mus	1a	<input checked="" type="checkbox"/>							<input type="checkbox"/>
46	Nobel	Rel	1a	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
7	Ander	Slø	1a,1b	<input type="checkbox"/>				Hån			<input type="checkbox"/>
47	Nobel	Rel	1b	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
70	Curie	Hån	1b	<input type="checkbox"/>				Hån			<input type="checkbox"/>
48	Nobel	Rel	2a	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
6	Callas	Kem	2a,2b,3a	<input checked="" type="checkbox"/>			Nobel				<input type="checkbox"/>
49	Nobel	Rel	2b	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
72	Curie	Hån	2b	<input type="checkbox"/>				Hån			<input type="checkbox"/>
81	Curie	Hån	2b,2a	<input type="checkbox"/>				Hån			<input type="checkbox"/>
3	Gauss	IT	3a	<input type="checkbox"/>				Hån			<input type="checkbox"/>
50	Nobel	Rel	3a	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
4	Gauss	IT	3b	<input type="checkbox"/>				Hån			<input type="checkbox"/>
51	Nobel	Rel	3b	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
71	Curie	Hån	3b	<input type="checkbox"/>				Hån			<input type="checkbox"/>
52	Nobel	Rel	4a	<input type="checkbox"/>			Nobel				<input type="checkbox"/>
80	Ander	Slø	4a	<input type="checkbox"/>				Hån			<input type="checkbox"/>

6.9 Room logic

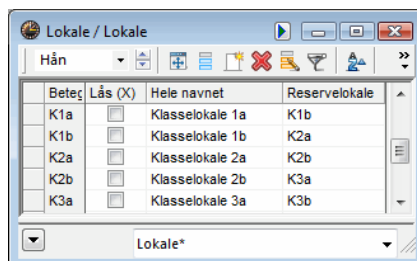
The following chapter is devoted to the treatment of rooms. Special attention will be placed on the difference between (subject) rooms and home rooms and how and why the Untis assigns a particular room to a lesson during optimisation.

6.9.1 Alternative rooms

Since rooms are usually a scarce resource when it comes to timetable construction, Untis provides the additional option of assigning an alternative room.

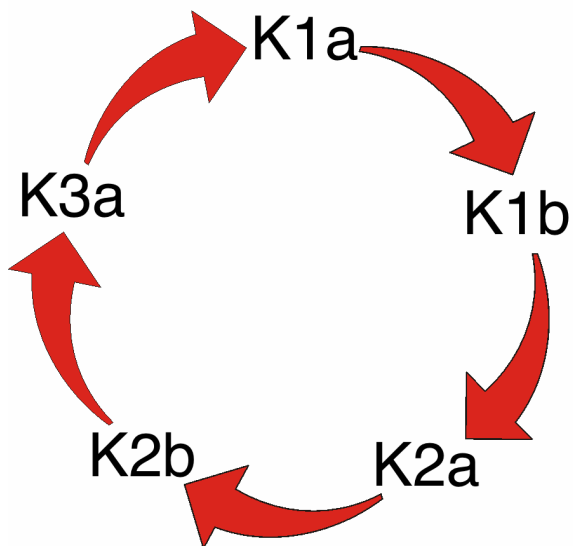
6.9.1.1 Alternative room ring

Since each alternative room can have its own alternative room, you can create entire alternative room rings by entering the original home room as the alternative room of the last alternative room in the chain. The example below shows such an alternative room ring.



Beteg.	Lås (X)	Hele navnet	Reserverlokale
K1a	<input type="checkbox"/>	Klasselokale 1a	K1b
K1b	<input type="checkbox"/>	Klasselokale 1b	K2a
K2a	<input type="checkbox"/>	Klasselokale 2a	K2b
K2b	<input type="checkbox"/>	Klasselokale 2b	K3a
K3a	<input type="checkbox"/>	Klasselokale 3a	K3b

Lokale*



Untis can allocate either one of the five rooms, depending on which would improve the optimisation results most. Both the optimisation and the room optimisation tools take into consideration the order in which the rooms are entered – an important criteria in the following two scenarios.

You can either recreate "geographic" aspects of your school by ensuring that the alternative room order reflects the relative locations of the rooms in the school. This would save teachers and students from wasting precious time when moving from room to room. In an alternative room ring, neighbouring rooms should therefore be listed in sequence.

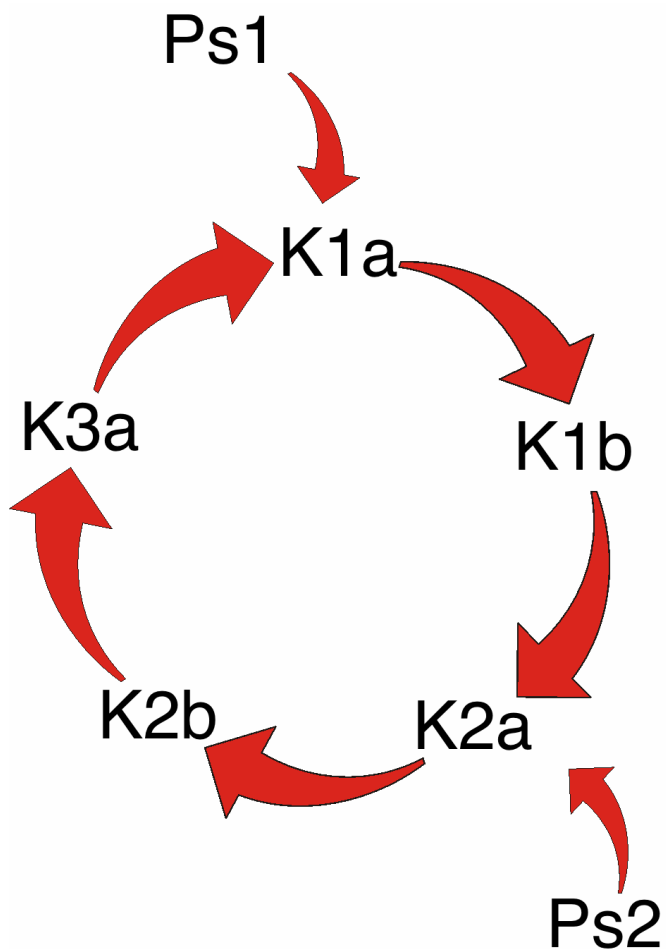
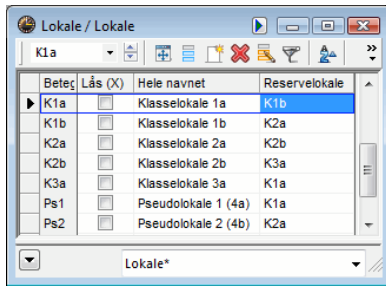
Another option is to use alternative room rings and chains to place the function of the rooms in context. When a room capacity has been defined for individual rooms under master data, you can list alternative rooms with approximately the same capacity in sequence (in an alternative room ring). Another aspect that could influence the order of rooms in alternative room rings is the equipment provided in the individual rooms.

Classes without a designated room

If your school has classes without designated rooms, you can use pseudo rooms by assigning a fictitious room to a class. You can then block this room by entering the time request "-3" for every period of the week.

	1	2	3	4	5	6	7	8
Mandag	-3	-3	-3	-3	-3	-3	-3	-3
Tirsdag	-3	-3	-3	-3	-3	-3	-3	-3
Onsdag	-3	-3	-3	-3	-3	-3	-3	-3
Torsdag	-3	-3	-3	-3	-3	-3	-3	-3
Fredag	-3	-3	-3	-3	-3	-3	-3	-3
Lørdag	-3	-3	-3	-3	-3			

Enter a room from the classroom ring as an alternative room for your pseudo room. Untis will now select a suitable classroom for the class (see example).



Including pseudo rooms in an alternative room ring

6.9.2 Room allocation

Untis provides three different methods of allocating rooms:

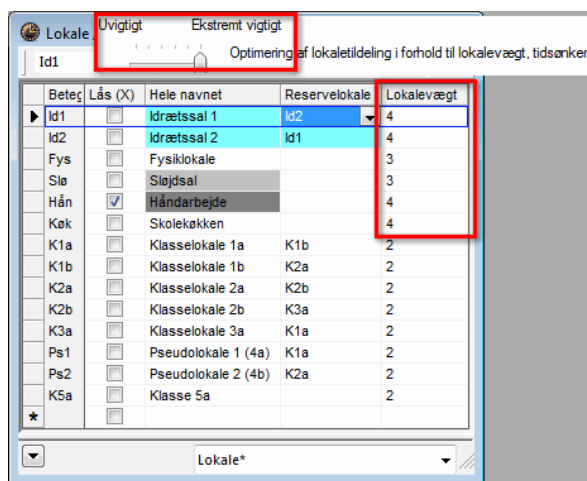
1. *Manual room* allocation in the scheduling dialogue, on the scheduling timetable or on the timetable (see the chapter "Manual timetabling")
2. *Automated room* allocation during optimisation

3. Optimised room allocation during room optimisation

The automated room allocation function during optimisation attempts to optimise timetables not just from the class or teacher perspective, but also from the room perspective.

Untis may even schedule a lesson for a period where a suitable room is unavailable. The lesson is then displayed in the diagnosis window under "Subject room missing".

To suppress this behaviour, set the room weighting of the specialist subject room to "4" (under master data) and the slider for "Optimisation of room allocation" in the weighting dialogue ("Scheduling | Weighting") on the "Rooms" tab to position 4 or 5 ("very important" or "extremely important"). Periods for which the optimisation tool is unable to find a suitable room will then remain unscheduled.



The room situation can be re-optimised without altering the class or teacher timetables (see section after next). This is useful when manual changes have been made to the scheduling of rooms and these changes are to be taken into account in other areas.

6.9.3 Room capacity

When room sizes and/or class sizes at your school differ widely, set the optimisation and the room optimisation tools to consider the capacity of individual rooms in order to prevent situations where a small class occupies a room suitable for twice the number of students or a large class is crammed into a small room designed for a much smaller number of students.

To ensure the proper functioning of the room capacity function, enter the following details (see also the chapters "Master Data" and "Lesson"):

Under "Master Data | Rooms"

- Capacity

Under "Master Data | Classes"

- Students (Male, Female)

For couplings under "Lessons"

- Students (Male, Female)

6.9.3.1 Alternative room chain

If you would like the room optimisation tool to consider the room capacity of alternative rooms, the alternative room ring must remain open, i.e. you need to create an alternative room chain, instead. Please see the following example.

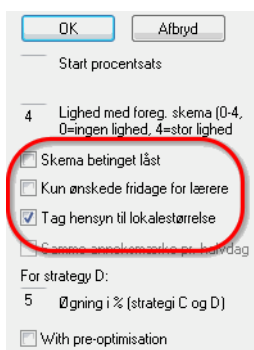


The example shows that room R3a has a capacity for 22 persons. When this room is unavailable, the next suitable room for this lesson is the slightly larger room R2a. The next room in the chain is the even larger room R2b etc. The alternative room for R1a is R1b, and the chain ends here because R3a with its lower capacity is unsuitable as an alternative room for R1b.

Room capacity and optimisation

If you want the room capacity to be taken into consideration, tick the relevant box in the optimisation or room optimisation dialogue before starting an optimisation or room optimisation run.

Specify the level of importance of the room capacity function by adjusting the "Consider room capacity" weighting in the weighting dialogue ("Scheduling | Weighting") on the "Rooms" tab.



6.9.4 Room optimisation

The room optimisation tool attempts to optimize the already optimised timetable by finding the most suitable room available for each lesson. The software obeys the following rules:

- Lesson periods will **not** be moved.
- Double periods (or period blocks) take place in the same room, if possible.
- When the software is unable to schedule all of the periods of a subject in the designated subject room, Untis tries to ensure that all classes have the name number of lessons scheduled in the subject room (e.g. if the school has 34 classes and only one Physics lab, Untis tries to ensure that each class has at least one period in the specialist subject room).
- When the optimisation tool is unable to schedule a lesson in a designated alternative room, the room optimisation function ensures that the lesson takes place in the designated home room, instead.
- The software attempts to allocate the same room to a class (or teacher) for the duration of an entire half-day. This is of particular importance for classes without a designated room. These should be

allocated with the aid of pseudo rooms.

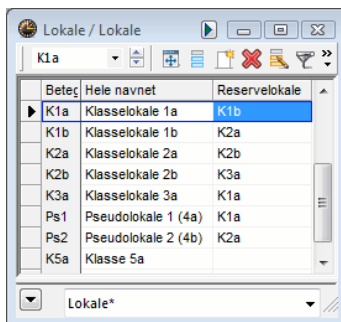
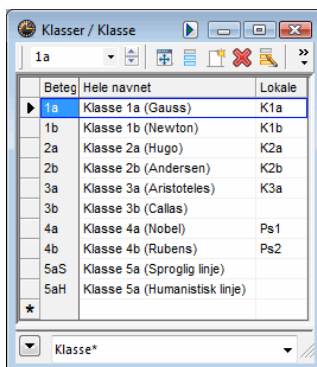
- Preference is given to alternative rooms listed close to the designated room in the alternative room chain.
- The rooms specified in a "Lessons" window take precedence over alternative rooms. This is of particular importance for classes without a designated room. A class without a designated room must never displace another class from its designated home room and can only be scheduled for a home room that is readily available.
- When a lesson is marked "r" All periods in the same room" (on the "Codes" tab under "Lessons | Teachers" or "Lessons | Classes"), the room optimisation tool attempts to schedule all the periods of the lesson in the same room while at the same time taking the room capacity into account. Rooms that are not designated home rooms are allocated first, and preferentially to double periods and period blocks.

The following example demonstrates the function of the room optimisation tool:

6.9.4.1 Example: step 1

Open the file "demo1.gpn".

Seven classes are listed under "Master Data | Classes". The column "Room" in the grid view shows that a pseudo room has been assigned to the last two classes (3b and 4). This means that these two classes do not have a designated room of their own. View the alternative rooms under "Master Data | Rooms". The alternative rooms allocated to the two pseudo rooms are the rooms for 1 and 2a ("R1a" and "R2a").



6.9.4.2 Example: step 2

When you have opened the file a class timetable should already be open. Open another timetable window via "Timetable | Rooms".

The first screenshot shows the '1a - Klasse 1a (Gauss)' window. The date is 19-09-2011. The timetable table is as follows:

	Ma	Ti	On	To	Fr	Lø
1	K1b	K1a	K1a	K1a	K1a	
2	K1b	K1a	K1a	K1a	Id2.	
3	Fys	K1a		K1a	Slø.	K1a
4	Fys	K1a		K1a	Slø.	K1a
5		K1a		K1a	K1a	K1a
6		Id2.	K1a			
7	K1a		K1a	Id2.		
8			K1a			

The second screenshot shows the 'K1a - Klasselokale 1a' window. The date is 19-09-2011. The timetable table is as follows:

	Ma	Ti	On	To	Fr	Lø
1	1b	1a	1a	1a	1a	4a.
2	1b	1a	1a.	1a		
3		1a	4a	1a	4a	1a
4		1a	4a	1a.	4a	1a
5	4a.	1a		1a	1a	1a
6			1a			
7	1a	4a				
8			1a	4a		

The third screenshot shows the '1a - Klasse 1a (Gauss)' window. The date is 26-09-2011. The timetable table is as follows:

	Ma	Ti	On	To	Fr	Lø
1	K1a	K1a	K1a	K1a	K1a	
2	K1a	K1a	K1a.	K1a	Id2.	
3	K1a	K1a		K1a	Slø.	K1a
4	K1a	K1a		K1a.	Slø.	K1a
5		K1a		K1a	K1a	K1a
6		Id2.	K1a			
7	K1a		K1a	Id2.		
8			K1a			

The fourth screenshot shows the 'K1a - Klasselokale 1a' window. The date is 19-09-2011. The timetable table is as follows:

	Ma	Ti	On	To	Fr	Lø
1	1a	1a	1a	1a	1a	4a.
2	1a	1a	1a.	1a		
3	1a	1a	4a	1a	4a	1a
4	1a	1a	4a	1a.	4a	1a
5	4a.	1a		1a	1a	1a
6			1a			
7	1a	4a				
8			1a	4a		

A number of columns in the class timetable may be marked "Before school starts". Select the next week in the date selection box of the timetable window to display the timetable for the days you want to view.

6.9.4.3 Example: step 3

On the class timetable, click several times on <Other element in period> until the room details are displayed. Repeat the same process for the room timetable until each period displays the class scheduled to have lessons in the room.

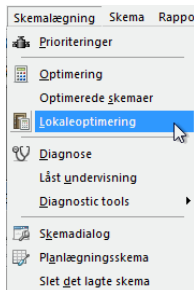


Inspect the timetable of a class and of its home room. The examples on the previous page show class 1a and its home room R1a. As you can see, the class is not always scheduled to have lessons in its home room because the room is occasionally occupied by other classes.

The entry "x" (e.g. Thursday, period 1, on the class timetable in the example) denotes periods for which no room has been allocated.

6.9.4.4 Example: step 4

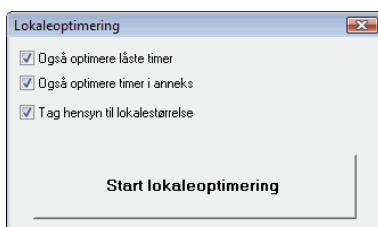
Select the menu item "Scheduling | Room Optimisation".



The room optimisation dialogue appears where you can specify if you wish to optimise locked and/or off-site rooms and if the room capacity should be taken into consideration.

6.9.4.5 Example: step 5

Click on <Start Room Optimisation>. Click on the button again when the room optimisation run finishes.



As you can see, the room optimisation tool has allocated the home room (R1a) for most of the lessons of class 1a and the designated subject room (PE and Design) for some of the lessons.

Please note the situation for classes without a designated room. Before the room optimisation, class 3b was scheduled to have lessons in room R1a on Tuesday, periods 4 and 5. Class 4 was scheduled for room R1a on Saturday, period 4. The room optimisation tool moved both classes to another room since

the placement violated the rule that a class must not be displaced from its home room.

After the room optimisation run, the situation is very different. Class 1a is back in its home room on Tuesday, period 4 and 5, and on Saturday, period 4. Instead, class 3b occupies room R1a on Monday, period 4, when class 1a is scheduled to have a PE lesson in the sports hall. Class 4 is scheduled in R1a on Saturday, period 5, because again, the room is not required by class 1a .

Any periods not yet allocated to a suitable room (as is often the case for classes without a designated room) can be assigned manually using the scheduling dialogue.

6.9.5 The role of subject rooms and home rooms

The entries for the specialist subject rooms and pivotal for room scheduling.

Let us assume in the following example that rooms have been entered in the subject room and home room fields.

Room optimisation would now attempt to schedule all periods for physics lesson number 95 in the specialist subject room physics laboratory.

U-nr.	Kla.	Lær	Ejski	Lås (X)	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbelttek.	Blok
11	4, 1			<input type="checkbox"/>	2		Hugo	Geo	1a,1b,2a,2b		K1a		
6	3, 7			<input type="checkbox"/>	1		Callas	Kem	2a,2b,3a		K2a		
75	2, 2			<input type="checkbox"/>	3		Rub	IdrD	2b,2a	Id1	K2b		
81	2, 2			<input type="checkbox"/>	2		Curie	Hån	2b,2a	Hån	K2b		1-1
94	2, 1			<input type="checkbox"/>	1		New	It	2a,2b		K2a		
18				<input type="checkbox"/>	2		Hugo	His	2a		K2a		
38				<input type="checkbox"/>	1		Callas	Mus	2a		K2a		
41				<input type="checkbox"/>	2		Callas	For	2a		K2a		1-1
48				<input type="checkbox"/>	2		Nobel	Rel	2a		K2a		
59				<input type="checkbox"/>	4		Cer	Dan	2a		K2a		
60				<input type="checkbox"/>	4		Cer	Eng	2a		K2a		
65				<input type="checkbox"/>	2		Cer	Bio	2a		K2a		
90				<input type="checkbox"/>	4		New	Mat	2a		K2a		
95				<input type="checkbox"/>	2		New	Fys	2a	Fys	K2a		

Note

If this condition cannot be met, optimisation will attempt, as in the example, to share the physics laboratory equitably among all classes with a claim on it.

Let us assume that the physics laboratory is not free for one of the two periods in which optimisation attempts to schedule physics lessons. In this case, room optimisation would schedule these periods in the home room - R2a in our example.

The timetable periods detail window will then indicate that room R2a has been allocated instead of the desired Phys (in parentheses).

Generally, if the desired subject room is not free, room optimisation will ensure that the period in question is held in the home room.

Please note that you could specify a (different) room to relocate lessons *for each individual lesson* if the desired subject room is not available

2a - Klasse 2a (Hugo) Skema (K1a1A)

2a Tidintervall Skemasammenligning

32 Ugelektioner 0 Ej skemalagte lekt. 19.09.2011 - 30.06.2012 aktiv Kun ændrede skemaer

	Mandag	Tirsdag	Onsdag	Torsdag	Fredag	Lørdag
1 8:00-8:	Dan Cer K2a	Bio Cer K2a	Kem Callas K2a Mat Olaus K2a Mat Ander K2a Eng Rub K2a Eng Hugo K2a Dan Nobel K2a Dan 7-1	Bio Cer K2a	Eng Cer K2a	His Hugo K2a
2 8:55-9:	Mat New K2a	IdrD Rub I1 IdrP Arist I2	Geo Hugo K1a	Dan Cer K2a	Rel Nobel K2a	Dan Cer K2a
3 9:50-1:		Mat New K2a	Rel Nobel K2a	Eng Cer K2a	Dan Cer K2a	Eng Cer K2a
4 10:45:	For Callas K2a	Eng Cer K2a	Mus Callas K2a	Geo Hugo K1a	Mat New K2a	Mat New K2a
5 11:40:	IdrD Rub I1 IdrP Arist I2	Fys New K2a	His Hugo K2a			Fys New Fys
6 12:35:				IdrD Rub I1 IdrP Arist I2		
7 13:30:				Hån Curie Hån	IT New K2a	
8 14:25:				Sle Ander Sle		

U-nr. Lærer, fag, lok. Kl. Tid Skoleuge Elev Særlig tekst Bånd Linjetekst 2

95 New, Fys, K2a (Fys) 2a 1-41 26

Tip

If 3 periods of a 5-period lesson have to be held in a subject room (i.e. not in the home room), enter a 3 in the field "Periods in room".

You must do the following if it is absolutely necessary for lessons to be held in a specific (subject) room,:

1. Set the room weighting for the room in question to 4 and
2. Weight the parameter "Optimisation of room allocation" on the "Rooms" tab under "Scheduling | Weighting" with 4 or 5.

Alternatively, you can delete the entry in the home room field for the lesson in question.

U-nr.	Kla_Lær	Ej ski	Lås (X)	UL	Årstelek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbelttek.	Blok
11	4, 1			2		Hugo	Geo	1a,1b,2a,2b		K1a		
6	3, 7			1		Callas	Kem	2a,2b,3a		K2a		
75	2, 2			3		Rub	Idr-D	2b,2a	Id1	K2b		
81	2, 2			2		Curie	Hån	2b,2a	Hån	K2b	1-1	
94	2, 1			1		New	IT	2a,2b		K2a		
18				2		Hugo	His	2a		K2a		
38				1		Callas	Mus	2a		K2a		
41				2		Callas	For	2a		K2a	1-1	
48				2		Nobel	Rel	2a		K2a		
59				4		Cer	Dan	2a		K2a		
60				4		Cer	Eng	2a	Spr-lab			
65				2		Cer	Bio	2a		K2a		
90				4		New	Mat	2a		K2a		
95				2		New	Fys	2a	Fys	K2a		

If you have only made an entry in either the *subject room* or in the *home room* fields (as in the above example for lessons 59 and 60), processing will as a rule be identical: room optimisation first tries to allocate the desired room (or one of its alternative rooms) to the all periods of the lesson in question.

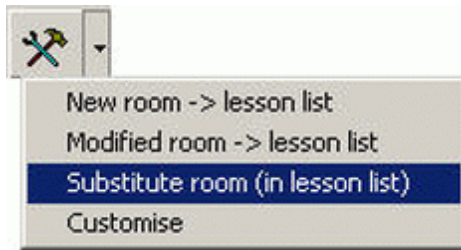
Diagnose	Pri	Ant
Indtasted data		10
Undervisning		1
Klasse		9
Lærer		45
Lokale		12
Faglok. mgl.	5	5
Lek. uden lok.	5	7
Fag		34
Elev		

If this does not succeed, what happens then depends on the weighting settings on the "Rooms" tab under "Scheduling | Weighting": the lesson periods remain unscheduled or no room is allocated.

Periods without a room will always be displayed in the diagnosis.

6.9.6 Changing home rooms - classes / teachers

You can change the home rooms for classes and teachers by clicking on <Special Functions> in the *All Master Data* window. Three different options are available. The following example demonstrates the differences between the three options.



Entering new home rooms

Class 1a has not been assigned a designated home room yet. The "Home room" cell in the lesson window of class 1a is therefore empty.

Class	Teacher	Room	Subject	Students
Name	Full name	Room	Main subj./day	Consec. Pers.
▶ 1a	Class 1a (Gauss)		4	2
1b	Class 1b (Newton)		4	2
2a	Class 2a (Hugo)		4	2
2b	Class 2b (Andersen)		4	2
3a	Class 3a (Aristoteles)		4	2
3b	Class 3b (Callas)		4	2
4	Class 4 (Nobel)		4	2
★				

U-nr.	Kla.	Lær	Ejski	Lås (X)	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek.	Blok
11	4	1		<input type="checkbox"/>	2		Hugo	Geo	1a,1b,2a,2b				
7	2	3		<input type="checkbox"/>	2		Ander	Sle	1a	Slo		1-1	
73	2	2		<input type="checkbox"/>	3		Arist	IdrP	1a,1b	Id2			
31				<input type="checkbox"/>	5		Arist	Mat	1a				
33				<input type="checkbox"/>	5		Arist	Eng	1a				
35				<input type="checkbox"/>	2		Callas	Mus	1a				
39				<input type="checkbox"/>	2		Callas	For	1a			1-1	
46				<input type="checkbox"/>	2		Nobel	Rel	1a				
53				<input type="checkbox"/>	5		Rub	Dan	1a				
63				<input type="checkbox"/>	2		Cer	Bio	1a				

Enter the room *R1a* under "Home room" for class 1a (after creating the lesson). Use the function <New room -> lesson list> to assign room *R1a* (now the home room) to all empty slots on the timetable of class 1a (Details entered manually under "Lessons | Classes" remain unchanged as the new home room is only entered into empty cells in the lesson view).

Beteg	Hele navnet	Lokale	Hovedfi	Fortløb
1a	Klasse 1a (Gauss)	K1a	4	2
1b	Klasse 1b (Newton)		4	2
2a	Klasse 2a (Hugo)		4	2
2b	Klasse 2b (Andersen)		4	2
3a	Klasse 3a (Aristoteles)		4	2
3b	Klasse 3b (Callas)		4	2
4a	Klasse 4a (Nobel)		4	2
4b	Klasse 4b (Rubens)			

U-nr.	Kla_Lær	Ej ski	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltk.	Blok
11	4, 1		2		Hugo	Geo	1a,1b,2a,2b		Ps1		
7	2, 3		2		Ander	Sle	1a	Sle	Ps1	1-1	
73	2, 2		3		Arist	IdrP	1a,1b	Id2	Ps1		
31			5		Arist	Mat	1a		Ps1		
33			5		Arist	Eng	1a		Ps1		
35			2		Callas	Mus	1a		Ps1		
39			2		Callas	For	1a		Ps1	1-1	
46			2		Nobel	Rel	1a		Ps1		
53			5		Rub	Dan	1a		Ps1		
63			2		Cer	Bio	1a		Ps1		

Replacing changed home rooms

Based on the preceding example, you want to change the home room of class 1a from R1a to the room STUDIO. Change the details accordingly (under "Master Data" of class 1a). At this point, the lesson window display still shows room 'R1a' as the home room of class 1a.

The function <Modified room -> lesson list> replaces the home room 'R1a' with the room 'STUDIO' for the lessons of class 1a (but only for those lessons which have 'R1a' entered as their home room).

Beteg	Hele navnet	Lokale	Hovedfi	Fortløb
1a	Klasse 1a (Gauss)	STUDIO	4	2
1b	Klasse 1b (Newton)		4	2
2a	Klasse 2a (Hugo)		4	2
2b	Klasse 2b (Andersen)		4	2
3a	Klasse 3a (Aristoteles)		4	2
3b	Klasse 3b (Callas)		4	2
4a	Klasse 4a (Nobel)		4	2
4b	Klasse 4b (Rubens)			

U-nr.	Kla,Lær	Ej ski	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek.	Blok
11	4, 1		2		Hugo	Geo	1a,1b,2a,2b		STUDIO		
7	2, 3		2		Ander	Slo	1a	Slo		1-1	
73	2, 2		3		Arist	IdrP	1a,1b	Id2			
31			5		Arist	Mat	1a		STUDIO		
33			5		Arist	Eng	1a		STUDIO		
35			2		Callas	Mus	1a		STUDIO		
39			2		Callas	For	1a		STUDIO	1-1	
46			2		Nobel	Rel	1a		STUDIO		
53			5		Rub	Dan	1a		STUDIO		
63			2		Cer	Bio	1a		STUDIO		

Overwriting home rooms

After some time, you decide to replace the home room STUDIO from the previous example with the room PSEUDOROOM1 for all the lessons of class 1a (including coupled lessons). Use the function <Substitute room (in lesson list)> to allocate PSEUDOROOM1 as the new home room for all the lessons of class 1a, i.e. not only to empty cells (compare the function <New room -> lesson list>) or to cells containing a specific room <Modified room -> lesson list>.

Beteg	Hele navnet	Lokale	Hovedfi	Fortløb
1a	Klasse 1a (Gauss)	Ps1	4	2
1b	Klasse 1b (Newton)		4	2
2a	Klasse 2a (Hugo)		4	2
2b	Klasse 2b (Andersen)		4	2
3a	Klasse 3a (Aristoteles)		4	2
3b	Klasse 3b (Callas)		4	2
4a	Klasse 4a (Nobel)		4	2
4b	Klasse 4b (Rubens)			
*				

U-nr.	Kla,Lær	Ej ski	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbeltlek.	Blok
11	4, 1		2		Hugo	Geo	1a,1b,2a,2b		Ps1		
7	2, 3		2		Ander	Slo	1a	Slo	Ps1	1-1	
73	2, 2		3		Arist	IdrP	1a,1b	Id2	Ps1		
31			5		Arist	Mat	1a		Ps1		
33			5		Arist	Eng	1a		Ps1		
35			2		Callas	Mus	1a		Ps1		
39			2		Callas	For	1a		Ps1	1-1	
46			2		Nobel	Rel	1a		Ps1		
53			5		Rub	Dan	1a		Ps1		
63			2		Cer	Bio	1a		Ps1		

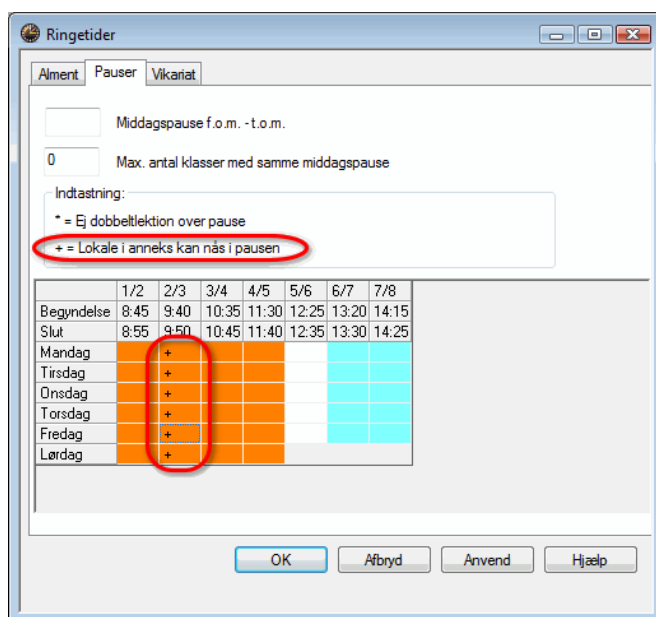
6.9.7 Off-site rooms

Off-site rooms are specialist subject rooms and classrooms located at such a distance from the main school building that a whole period needs to be set aside to allow teachers and students to reach the *off-site* rooms. The automated *optimisation* function takes the length of the walking time into account when optimising the timetable.

A PE teacher is scheduled to teach periods 1 and 5 in the main building and period 3 at the (off-site) sports track. The timetabling tool will ensure that periods 2 and 4 remain unscheduled for the teacher to allow him or her sufficient time to reach the sports track.

Breaks of different lengths

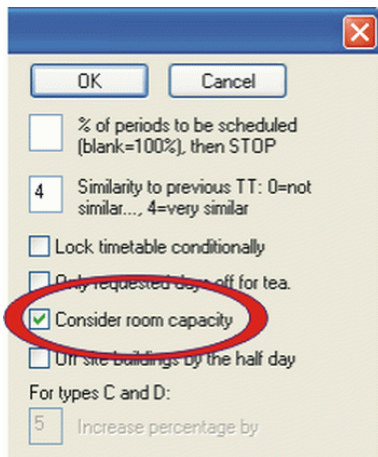
Many schools use timetables where some breaks are longer than others and where it is therefore possible to reach an off-site location during one of the longer breaks. Breaks of sufficient length to reach an off-site location can be marked "+" in the *time grid* under "Breaks".



The time grid above shows that the 20-minute break between periods 2 and 3 is sufficiently long enough to reach the off-site location. The PE teacher in the example above would therefore be able to teach period 2 in the main building and still manage to reach the sports track in time for period 3.

Half-day external site



With the "Half-day external site" option it is possible to specify that teachers and students may not switch buildings for half a day, thus minimising the number of times they need to switch buildings.



6.9.7.1 Start time graduation

Instead of wasting an entire period to reach an off-site location, the start time of certain lessons can be adjusted slightly to suit the situation.

Using this method, the PE teacher from the previous example can be scheduled to teach periods 1, 2 and 5 in the main building and period 3 at the off-site sports track. The software schedules a free period for period 4 to allow the teacher sufficient time to return to the main building after period 3.




Start of period - main building		Start of period - off-site building
	Walking time 15 Minutes	
Period 1: 0800hrs		Period 1: 0815hrs
Period 2: 0900hrs		Period 2: 0915hrs
Period 3: 1000hrs		Period 3: 1015hrs
Etc...		Etc...

6.9.7.2 Off-site codes

Off-site rooms are marked with an *off-site code* entered under masterdata.

Off-site rooms with graduated lesson starts

Enter the same (numerical) off-site code for all the rooms at an offsite location where you operate a system of *start time graduation*. The permitted values are between 1 and 9.

	Main building 	Walk. time	Off-site building 1 	Walk. time	Off-site building 2 
Off-site code	none	15 minutes	1	10 minutes	2
1. Per.	08:00		08:15		08:25
2. Per.	09:00		09:15		09:25
3. Per.	10:00		10:15		10:25
4. Per.	11:00		11:15		11:25

Your school has two off-site locations. The first is a 15 minute walk away from the main building, the second a 10-minute walk away from the first off-site location. Enter a value for each off-site room as described above to enable Untis to schedule the teacher as follows::

Period 1 – main building, Period 2 – off-site location 1, Period 3 – off-site location 2.

Untis allocates one free period for the return from one of the off-site buildings to the main building or from off-site location 2 to off-site location 1.

Untis takes into account:

- The walking times for teachers and students to off-site subjectrooms and classrooms
- The walking times for teachers and students from off-site subject rooms and classrooms back to the main building

It is advisable to reduce the number of times teachers and students are obliged to move between main and off-site buildings to an absolute minimum. The following example shows how to do this:

For teachers who teach both in the main building and at off-site locations, enter the number "1" under *Subject sequence - Teachers* for lessons that take place in the main building, and the number "2" for lessons that take place in the off-site building.

U-nr.	Kla.	Ej sk	UL	Årslek	Lære	Fag	Klass	Faglo	Stamiokale	Dobbi	Blot	Faglærer
6	3	.	1		Rub	Eng	2a,2b		Ps 1			1
73	2	.	3		Rub	IdrD	1a,1b	Id1	Ps 1			2
75	2	.	3		Rub	IdrD	2b,2a	Id1				2
76	2	.	3		Rub	IdrD	3a,3b	Id1				2
53			5		Rub	Dan	1a		Ps 1			1
54			6		Rub	Dan	1b			0-1		1
55			2		Rub	His	2b					1
56			2		Rub	His	3a					1
57			2		Rub	Bio	4a					1
58			2		Rub	Dra	4a					1

Untis will then attempt to schedule as many periods as possible in the same building for the teacher.

Off-site rooms without graduated lesson starts

If you are unable to graduate lesson starts as described in the previous section, you need to schedule one free period each for the walk to and from the off-site location for teachers and students.

To achieve this use the off-site codes A – E for the off-site rooms.

To ensure the correct treatment of off-site rooms during optimisation, enter the following details:

Under "Master Data | Rooms"

- Off-site code
- Room weighting

Under "Scheduling | Weighting | Rooms"

- Optimisation of room allocation
- Optimisation of the off-site rooms

Periods scheduled for rooms with off-site code '1' are marked y and Y in the scheduling dialogue. Periods scheduled for rooms with other off-site codes are marked z and Z (upper case letters denote couplings).

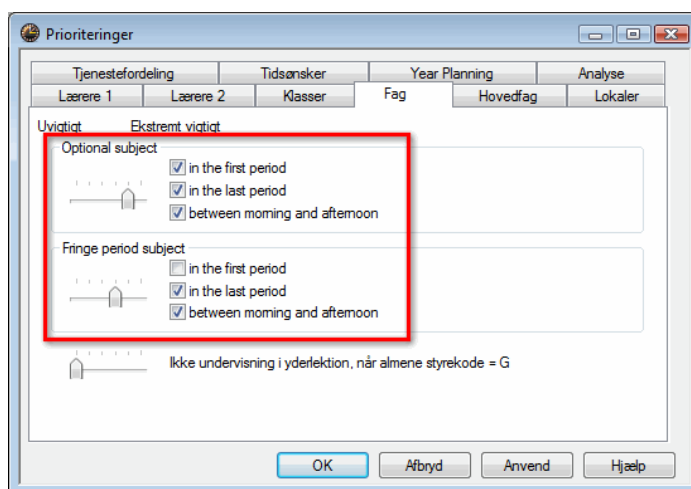
	Monday	Tuesday	Wednesday	Thursday	Friday
Les. 57					
Cla. 3a	y y y y Z	Z Z y y O y & y	Z y y Z Z &	y y O y y & Z Z	z Z Z y y
Tea. New	y z y z	Z -2 -2 z z O y y -2 -2	z z Z z	z y O y y +3 +3	y Y y Z Y Y
Rm. Gym	z z z	z z O	z z Z z	z z O	
Rm. CL	z	Z Z Z Z Z Z	z z O	z z	O Z Z

6.10 Optional subjects and fringe periods

Not every subject is attended by every student of a class. When this is the case, it may be desirable to schedule such subjects at the beginning or the end of a half-day (in the so-called *fringe periods*) to enable students who do not take part in the subject to come to school later or leave school early or have a longer lunch break.

To enable the software to schedule subjects in fringe periods, mark the subject with the code *Optional subject* or *Fringe period* (under "Master Data | Subjects"). The two codes have the same function, but can have different weighting settings.

The following weighting settings instruct the software to schedule optional subjects preferentially in the *last* periods of a half-day and fringe period subjects *either* in the first *or* the last periods.



Code G has the opposite effect. Subjects marked "(G) Not a fringe period" are *not scheduled* in fringe periods.

6.11 Main subjects

Subjects that are considered particularly strenuous or important for students can be marked with the *Main subject* code. This allows the optimisation tool to observe the following restrictions:

- Maximum number of main subjects that may be scheduled for a class per day
- Maximum number of main subjects that may be scheduled in sequence for a class
- Maximum number of main subjects that may be scheduled to take place after a defined boundary period.

To ensure the correct treatment of main subjects during optimisation, enter the following details:

Under "Weighting | Main subjects"

- Respect max. number of main subjects per day for classes
- Respect max. number of consecutive main subjects for classes
- Boundary period
- Main subjects max. once after boundary period
- Main subject at least once up to boundary period

Please see a detailed description of the boundary period function under "Weighting parameters".

Under "Master Data | Subjects"

- Code (M) Main subject

Under "Master Data | Classes"

- Max. main subjects per day
- Max. consecutive main subjects per day

6.12 Subject sequences

Subject sequence codes can be entered for subjects and lessons. Subject sequence codes entered for subjects apply to the entire school; codes entered for lessons only apply to the classes (teachers) involved in the lesson.

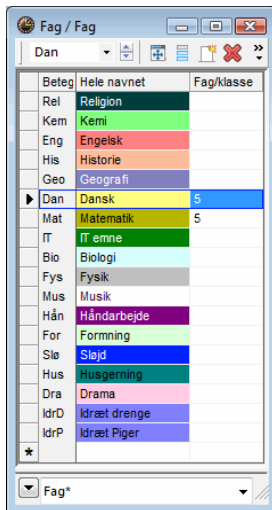
Note

Subject sequences are 'soft' conditions for the algorithm, i.e. they may be ignored in extreme cases. A weighting slider can be used to control the importance attached to these fields. Use **fixed subject sequences** if the subject sequence **must** be respected (see chapter "Subject sequences")

6.12.1 Positive subject sequence

Classes

It may be desirable for pedagogical or organisational reasons to schedule certain subjects in sequence.



For example, to allow time for a two-period written exam, you want to schedule the subjects German (DE) and Math (MA) in sequence. It is irrelevant in this case if the sequence is DE-MA or MA-DE.

Version 1

Applies to the entire school

Enter the same numerical subject sequence code (under "Master Data | Subjects") for both subjects, e. g. "5" (see example on the right).

U-nr.	Kla	Lær	Ejski	UL	Årslek	Lærer	Fag	Klasse(r)	Faglokale	Stamlokale	Dobbetlek	Blok	Fag/Klasse
11	4, 1			2		Hugo	Geo	1a, 1b, 2a, 2b		Ps1			
7	2, 3			2		Ander	Slø	1a	Slø		1-1		
73	2, 2			3		Arist	IdrP	1a, 1b	Id2				
31				5		Arist	Mat	1a		Ps1			
33				5		Arist	Eng	1a		Ps1			
39				2		Callas	For	1a		Ps1	1-1		
46				2		Nobel	Rel	1a		Ps1			
35				2		Callas	Mus	1a		Ps1			5
53				5		Rub	Dan	1a		Ps1			5
63				2		Cer	Bio	1a		Ps1			

Version 2

Applies to a particular class (e.g. class "4")

Enter a numerical subject sequence code (under "Lessons | Classes") in the relevant lesson rows for class 4, e.g. "5" (see example on the right).

Teachers

You can also enter subject sequence requests for teachers. This is a useful function for subjects that require elaborate experiments to be set up. For example, a teacher who teaches Physics to three different classes of the same year may request to have these lessons scheduled in sequence to allow him to show the same experiment several times in a row.

Another example involves teachers who teach PE plus another subject. The PE lessons should, if possible, be scheduled in sequence so that the teacher is not obliged to change into PE clothes several times a day.

In both cases, enter the same numerical subject sequence code for the lessons you want to schedule in sequence (under *Subject sequence - Teachers*).

U-nr.	Kla	Lær	Ejski	UL	Årslek	Lære	Fag	Klass	Faglo	Stamlokale	Dobbi	Blok	Fag/lærer
6	3, 7			1		Rub	Eng	2a, 2b		Ps1			
73	2, 2			3		Rub	IdrD	1a, 1b	Id1	Ps1			1
75	2, 2			3		Rub	IdrD	2b, 2a	Id1				1
76	2, 2			3		Rub	IdrD	3a, 3b	Id1				1
53				5		Rub	Dan	1a		Ps1			
54				6		Rub	Dan	1b			0-1		
55				2		Rub	His	2b					
56				2		Rub	His	3a					
57				2		Rub	Bio	4a					
58				2		Rub	Dra	4a					

6.12.2 Negative subject sequence

On the other hand, it may be desirable to prevent specific subject sequences. If this is the case, simply enter an alphabetic subject sequence code (letter from A to F). The optimisation tool will take into account that lessons with the same alphabetic subject sequence code should not be scheduled in sequence.

For pedagogical reasons, the Modern Languages subjects German (DE) and French (FR) should not be scheduled in sequence for class 3a. Enter the letter "A" in the column Subject sequence – Classes (see example).

U-nr.	Kla	Lær	Ejskiv	UL	Årstelek	Lærer	Fag	Klasse(r)	Fagløkale	Stamlokale	Dobbetlek	Blok	Fag/klasse
6	3, 7			1		Callas	Kem	2a, 2b, 3a		K2a			
43	2, 2			2		Callas	For	3a, 3b		K3a	1-1		
76	2, 2			3		Arist	IdP	3a, 3b	Id2	K3a			
79	2, 2			2		Ander	Slu	3a, 3b	Slu	K3a	1-1		
1				4		Gauss	Mat	3a		K3a			
3	1, 2			2		Gauss	IT	3a		K3a	0-1		
9				2		New	Fys	3a	Fys	K3a			
15				2		Hugo	Geo	3a		K3a			
22				4		Ander	Dan	3a		K3a			
29				1		Ander	Slu	3a	Slu	K3a			
50				2		Nobel	Rel	3a		K3a			
56				2		Rub	His	3a		K3a			
101				3		Rub	F	3a		K3a			A
62				3		Cer	Eng	3a		K3a			A
67				2		Cer	Bio	3a		K3a			

The following details are required to ensure the correct treatment of subject sequences during optimisation:

Under "Scheduling | Weighting | Teachers"

- Respect subject sequence - Teachers and/or

under "Scheduling | Weighting | Classes"

- Respect class sequence - Classes

Under "Scheduling | Weighting | Subjects"

- Subject sequence (classes or teachers)

or

under "Lesson"

- Subject sequence (classes or teachers)

6.13 Class Clash Code (CCC)

Teachers, classes and rooms should never be double booked by the gp-Unti optimisation algorithm. A possible exception are lessons attended by only some of the students of a class.

The students of class 1a attend *either* Choir *or* Orchestra, but none of the students attend both. Enter the same *numerical* CCC for both lessons (permitted values 1 - 9), e.g. "5" to instruct the Untis optimisation algorithm that the lessons Choir and Orchestra may be scheduled at the same time, but that this is not compulsory (see example on the following page).

3a - Klasse 3a (Aristoteles) Skema (K1a1A)

3a Tidsinterval Skemasammenligning
 aktiv
 Kun ændrede skemaer

34 Ugelektioner
 3 Ej skemalagte lekt. 19-09-2011 - 30-06-2012

	Mandag	Tirsdag	Onsdag	Torsdag	Fredag	Lørdag
1 8:00-8:	Fys New Fys	Dan Ande K3a	IT. Gaus Hån Curie K3a Hån	IdrP. Arist IdrD Rub Id2 Id1 1)	Eng Cer K3a	Rel Nobel K3a
2 8:55-9:	Bio Cer K3a	Mat Gaus K3a	Geo Hugo K3a	Dan Ande K3a	Mat Gaus K3a	Eng Cer K3a
3 9:50-1	IdrP. Arist IdrD Rub Id2 Id1 1)	Slø Ande Slø	*Ke Callas *Mat Gaus K2b K3a 2)	Mat Gaus K3a	Slø. Ande Hus Curie Slø/Kæk 4)	Mat Gaus K3a
4 10:45:	IT. Gaus Hån Curie K3a Hån	Rel Nobel K3a	Dan Ande K3a	Eng Cer K3a	Slø. Ande Hus Curie Slø/Kæk 4)	Dan Ande K3a
5 11:40:		Bio Cer K3a				
6 12:35:	ERH Curie K1b K3a			Geo Hugo K3a		
7 13:30:			His Rub K3a	For. Callas Mus Ande K3a K3b 3)	His Rub K3a	
8 14:25:			IdrP. Arist IdrD Rub Id2 Id1 1)		Fys New Fys	

U-nr.	Lærer, fag, lok	Kl.	Tid	Skoleuge	Elev/ Særlig tekst	Bånd	Linjetekst 2
103	Rub, PRA, K3a	3a		1-41	28		
-3							

Klasse 3a (Aristoteles) / Klasse

3a

U-nr.	Kla, Lær	Ej ski	UL	Årslek	Lærer	Fag	Klasse(r)	KKK	Faglokale	Stamlokale	Dobbeltlek.	Blok	Fag/klasse
6	3, 7		1		Callas	Kem	2a,2b,3a			K2a			
43	2, 2		2		Callas	For	3a,3b			K3a		1-1	
76	2, 2		3		Arist	IdrP	3a,3b		Id2	K3a			
79	2, 2		2		Ander	Slø	3a,3b		Slø	K3a		1-1	
1			4		Gauss	Mat	3a			K3a			
3	1, 2		2		Gauss	IT	3a			K3a		0-1	
9			2		New	Fys	3a		Fys	K3a			
15			2		Hugo	Geo	3a			K3a			
22			4		Ander	Dan	3a			K3a			
29			1		Ander	Slø	3a		Slø	K3a			
50			2		Nobel	Rel	3a			K3a			
56			2		Rub	His	3a			K3a			
101		3	3		Rub	F	3a			K3a			A
62			3		Cer	Eng	3a			K3a			A
67			2		Cer	Bio	3a			K3a			
102			1		Curie	ERH	3a	1		K3a			
103			1		Rub	PRA	3a	1		K3a			

U-nr. 6 Klasse*

There are three subject groups. Each student chooses one of the groups and attends all the lessons offered within this group. Conflicts between the individual groups are therefore permissible. Assign *the same CCC letter* to all lessons that must not be in conflict with other lessons. Assign a different CCC letter to all lessons where conflicts are permissible.

	Subjects	CC C
Group 1	French and Italian	A
Group 2	Chemistry and Physics	B
Group 3	Literature and Drama	C

Please note that entering a CCC *permits* , but does not *enforce* the creation of a conflict between lessons. Consequently, the diagnosis tool will not display an **NTP** (non-teching period) for classes when the lessons marked with the class conflict symbols A, B and C are **not scheduled at the same time** .

6.14 Timetable comparison

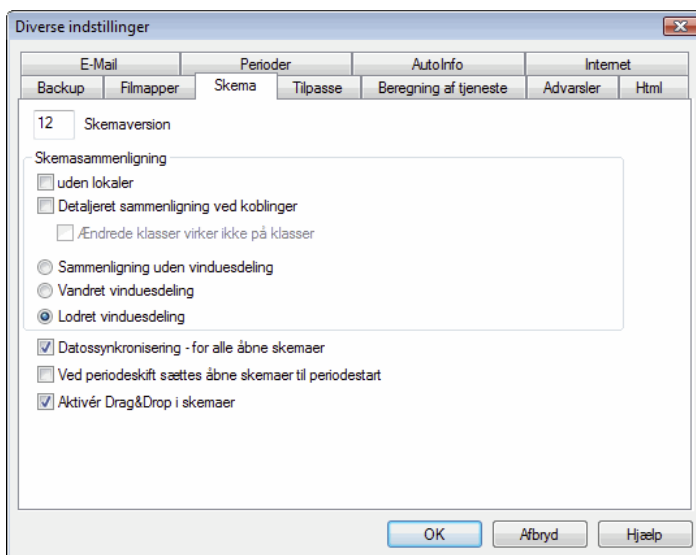
It is often useful and necessary to compare timetables with each other, for instance when you implement manual changes or when you want to compare different versions of your timetable after the completion of several optimisation runs. For this purpose, Untis provides the function "Timetable comparison" described in this chapter.

First, the chapter will introduce a number of settings options relevant for timetable comparisons.

- Comprehensive overviews, i.e. two timetables with format 20 or 30, provide an overview of the timetables of the entire school.

6.14.1 'Timetable' tab

Under "Settings | Miscellaneous", open the settings dialogue and select the "Timetable" tab. Here you will find an input block with different settings for comparing timetables. Unter „Einstellungen | Diverse“, öffnen Sie den Einstellungsdialog und wählen die Karteikarte „Stundenplan“. Hier finden Sie unter Anderem einen Eingabeblock mit einigen Einstellungen für den Stundenplanvergleich.



The following settings options are available:

Without rooms

Tick this box if you want the software to ignore individual rooms during the timetable comparison.

Detailed comparison for couplings

Activate this option if you only want to see the timetable differences for the elements of the selected coupling row, but not for all the elements of the selected lesson.

Classes: ignore changes in couplings

This option is only available when the previous option is active. If the timetable changes involve classes only, the changes are only displayed on the class timetables of the classes affected by the changes.

During a timetable comparison, Untis is started a second time. The next three settings concern the arrangement of the two windows.

Comparison without window arrangement

Select this option if you want to arrange the two windows manually.

Tile horizontally

Select this option if you want Untis to arrange the original timetable at the top and the modified version at the bottom.

Tile vertically

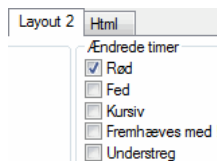
Select this option if you want Untis to arrange the original timetable on the left and the modified version on the right.

The selected window arrangement is not fixed and you can manually change the arrangement at any time. As soon as you close the second window, the original Untis timetable reverts to its former state (e.g. full screen).

If you have two monitors connected to your computer or later), you can display the two versions on two separate screens.

6.14.2 'Layout 2' tab

Another settings option allows you to specify how the differences between the two versions should be displayed. Open a timetable (e.g. „Timetable | Classes“), click on <Timetable Settings> and open the "Layout 2" tab to view and select different display options.



note

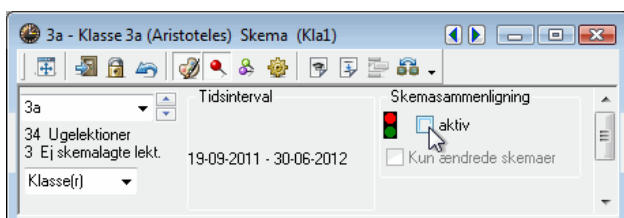
Hinweis!

The <Timetable Settings> button can only be activated when no timetable comparison is active.

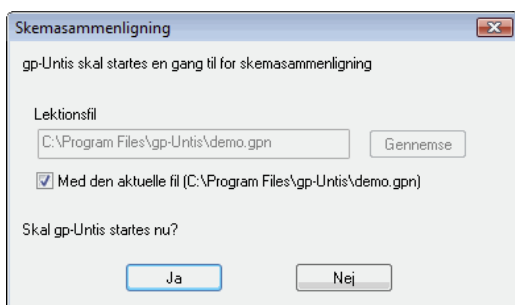
**6.14.3 Starting timetable comparison**

Start a timetable comparison as follows:

Open a timetable (e.g. "Timetable | Classes") and, if necessary, enlarge the upper part of the window – the details window – until the combo box "Timetable comparison" becomes visible. Activate the function by ticking the box with your mouse.



The timetable comparison dialogue window will appear and instruct you to start Untis a second time. Specify if you want to open the current file a second time or if you want to open a different file.



The following list summarises the different items you can compare:

- Different files, i.e. timetables saved under different names
- Different school weeks (of the same file). Open the same file in both Untis versions and select two different weeks from the timetable display
- Different terms of the same file (for use with the Multiple Term Timetable module)
- Changes to the current work file since the file was last saved

Note

The second timetable must have the same format and the same number of columns and rows as the first (an important factor when comparing timetables from different files).

Select the desired option and click on <Yes> to start Untis a second time. The two versions will be arranged as specified. You may have to move the navigation bar to the bottom or the right window edges to be able to view the entire timetable. The second version also displays a timetable.

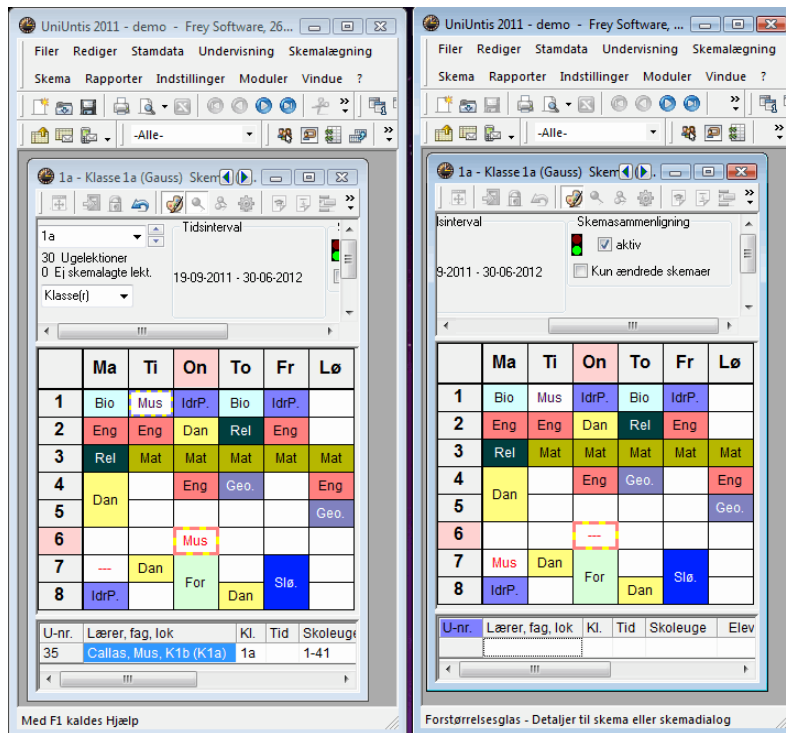
6.14.4 The process of timetable comparison

The two Untis timetable versions communicate with each other and exchange information. During this process, the traffic light situated next to the timetable comparison combo box is green.

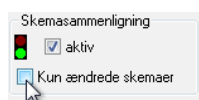


When the timetable comparison function is active, the two timetables are synchronised. This means that you can scroll from class to class in one of the two timetables, and the other timetable automatically scrolls to the same class. Move the cursor from period to period and the second timetable will always display the same period.

The example on the following page shows an active timetable comparison. The RE lesson is highlighted because it is scheduled for different periods (left, Tue-5; right, Thu-5).



All three periods of German are also highlighted, the reason for which is shown in the period details window in the bottom part of the window. In contrast to the timetable on the left, the timetable on the right shows that a room has been allocated to the lesson. The room difference would not be displayed if the setting "Without rooms" had been activated.



Below the combo box „Timetable comparison“, you will see another combo box entitled „Only modified timetables“. This function can only be activated when a timetable comparison is active. Ticking this box automatically activates the function in both timetables. Untis proceeds to compare all the timetables of the selected element and displays a message box showing the number of timetables in both versions that contain differences. Close the message box by clicking on <OK>. When this function is active, you can only scroll through timetables that contain changes. Timetables with identical contents are no longer displayed.

The function "Timetable comparison" allows you to compare the following timetable formats:

- Single timetables, i.e. two timetables of format 01 or 10, are usually displayed side by side.

6.15 Window groups

Different timetabling tasks often require the instant availability of very different types of data. When assigning teachers to lessons, for example, you may find that an open scheduling dialogue is more a

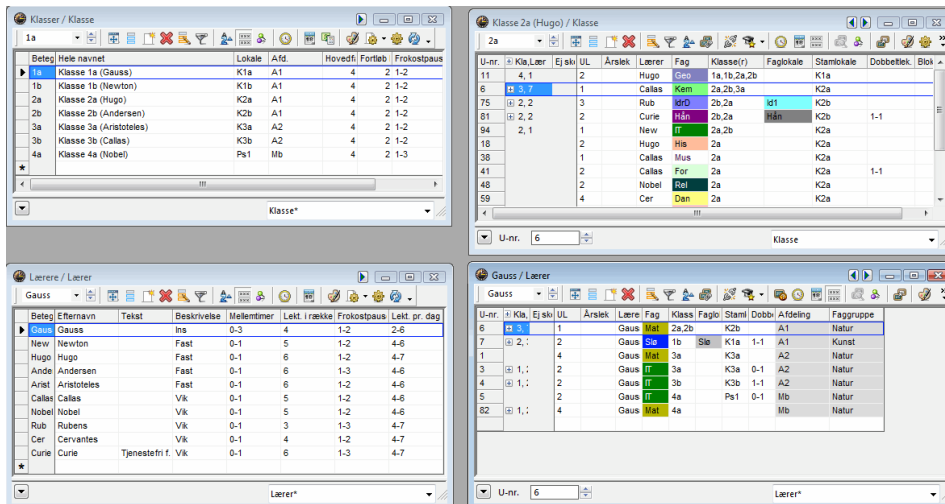
hindrance than a help. Equally, the presence of a weighting window on screen would unnecessarily clutter up the screen when all you are trying to do is some manual fine-tuning of the timetable.



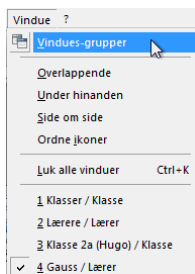
Untis solves this problem with the *Window Groups* function that allows you to set up the screen for a specific timetabling task and save the window position so you can call it up again at a later point in time.

The following example will demonstrate how to create a windows group.

1. Open the demo.gpn file and arrange the windows as shown in the figure

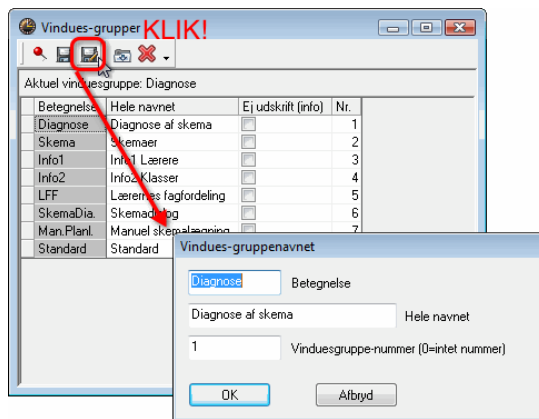


2. Click on the <Windows Group> button in the main tool bar. Alternatively you can open the window via the function "Windows | Window Groups".



3. Click on the button <Save window group as> and assign meaningful short and long names.

Enter 9 in the field "Window group number" and confirm with <OK>.



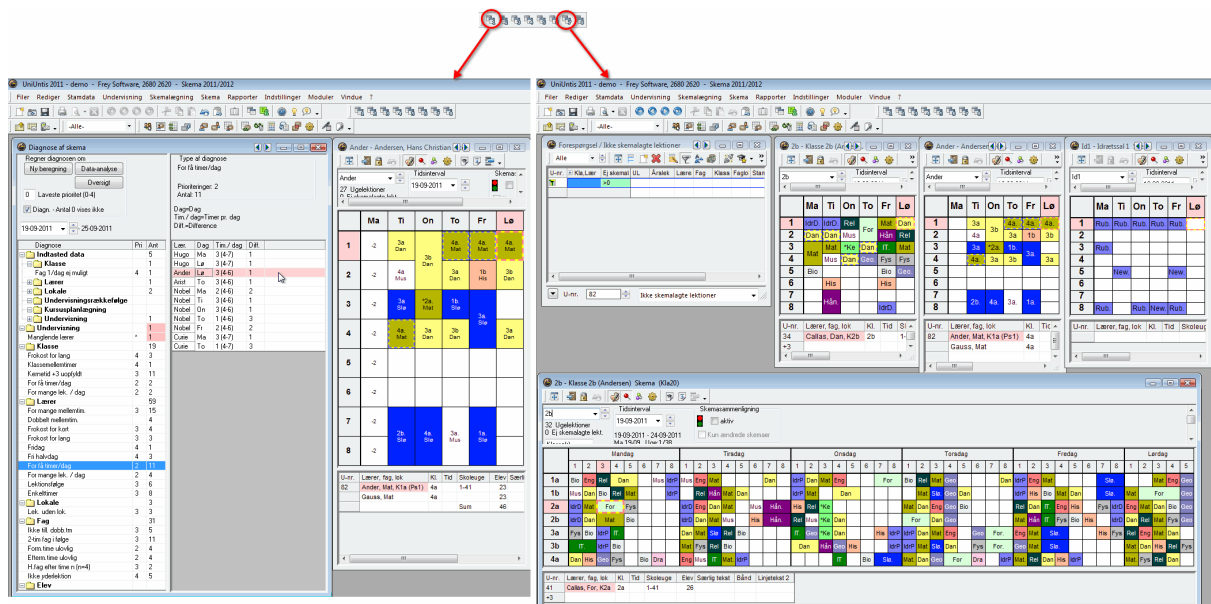
Please note that a button has been added to the "Window Groups" tool bar.



If your screen does not display the tool bar, please left-click on the main tool bar and check the box "Window Groups".



4. Now click on other buttons in the tool bar. Each button has been assigned a different window arrangement.



Tip

You can transfer the window groups from one file to another at any time. To do this, open the file into which you wish to import the settings and select "File | Import/Export | Timetable/Input Format". On the "Import window groups" tab you can now navigate to the .gpn file from which you wish to import the window groups and start the import process.

6.16 Exporting to Microsoft Excel

Utimura allows you to export all timetables and reports to MS Excel.

Exporting timetables

Proceed as follow if you wish to export a timetable to MS Excel:

- Right click on the timetable and select "Copy in HTML format"
- Switch to MS Excel and select "Edit | Paste" (or Ctrl-V).

Projectmappe1

3a - Klasse 3a (Aristoteles)

3a

32 Ugelektioner

19-09-2011

	Ma	Ti	On	To	Fr	Lø
1	Fys	Dan	IT	IdrP.	Eng	Rel
2	Bio	Mat	Geo	Dan	Mat	Eng
3	IdrP.	Sle	*Kem.	Mat	Sle	Mat
4	IT	Rel	Dan	Eng		
5		Bio				
6					Geo	
7			His	For.		
8			IdrP.			

Untis 2011 Skema 2011/2012 Frey Software, 2680 2620 15.07.10 12

Klasse 3a (Aristoteles)

<ctrl> + V

HØJREKLIK!

Indstilling af skema
Skemarude
Tildel/slet lokale
De-coupling
Lektionsrude: Standardformat
Kopier til Html-format

U-nr. Lærer, fag, lok
22 Ander, Dan, K3a 3a 1-41 2
+3

Side 1/1 Sum=0

6.16.1 Exporting reports

Proceed as follows if you wish to export reports:

- Select the report you wish to export under "Reports | Select ..."
- Click on the <Excel export> button in the main tool bar and select the desired settings for export.



- When you confirm with <OK>, MS Excel will be launched and the report you selected will be exported.

DOBBELKLIK!

Unis 2011 Skema 2011/2012 Frey Software, 2690 2620 15-07-2010 12:08
 12 Gælder fra: 10. oktober Til Demo- Og Kursusbrug Belægningsstatistik

Belægningsstatistik

Betegnelse	Hele navnet	Skema for flere uger					Udægnings	Udægnings	Udægnings	Udægnings
		Data	Tilgængelig	Belagt	Tim-Min	Udægnings				
Id1	Idrætssal 1	12	45	12	9:00	26%				
Id2	Idrætssal 2	12	45	12	9:00	26%				
Fys	Fysiklokale	11	45	11	8:15	24%				
Slå	Sløjdsal	10	45	10	7:00	22%	1 845	410	307:30	
Hån	Håndarbejde	13	45	13	9:45	28%	1 845	533	399:45	
KøK	Skolekøkken	2	45	2	1:30	4%	1 845	82	61:30	
K1a	Klasselokale 1a	25	45	33	24:45	73%	1 845	1353	1 014:45	
K1b	Klasselokale 1b	21	45	28	21:00	62%	1 845	1146	961:00	
K2a	Klasselokale 2a	23	45	25	18:45	55%	1 845	1025	768:45	
K2b	Klasselokale 2b	21	45	24	18:00	53%	1 845	994	738:00	
K3a	Klasselokale 3a	24	45	25	18:45	55%	1 845	1025	768:45	
K3b	Klasselokale 3b	20	45	22	16:30	48%	1 845	902	676:30	
Ps1	Pseudokale 1 (4a)	25	0	0	0:00	0%	0	0	0:00	
Ps2	Pseudokale 2 (4b)	1	0	0	0:00	0%	0	0	0:00	
K5a	Klasse 5a	0	45	0	0:00	0%	1 845	0	0:00	
Sum		220	585	217	162:45	37%	23 985	8897	6 672:45	

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