

This table is being modified as the module progresses. / *Hierdie tabel word opgedateer soos wat die module vorder.*

Those cells colored white are future days and the description is "**What is planned for that class.**"

Selle wat wit ingekleur is, is toekomstige dae en die inhoud daarvan is "Wat beplan word vir daardie klas."

Those cells colored light yellow are past days and the entry is "**What has been done in class.**"

Selle wat liggeel ingekleur is, is dae wat verby is en die inhoud daarvan is "Wat in die klas gedoen is."

Lecture no <i>Lesing no</i>	Date <i>Datum</i>	Day <i>Dag</i>	Z+W sections <i>paragrafe</i>	Contents <i>Inhoud</i>
1	17-Jul	Mon	7.5	Introduction, Contents of Module, Preliminaries: Parametric representation, Notation, Dot+Cross prod Lines in 3D: Vector form, Parametric form, Symmetric form.
	19-Jul	Wed	TUT 1 TT 1	TUT 1. TT 1: Lines in 3D
2	20-Jul	Thu	7.5	Planes in 3D: Parametrised form, Vector form with normal, How to draw, Ex.1: three points given, find plane, MATLAB DEMO: Line in 3D
3	24-Jul	Mon	9.1	MATLAB DEMO: Space curves [9.1] Vector functions, how to draw them, the derivative of a vector function, Space curves, Tangent vectors, Arc length of vector functions
	26-Jul	Wed	TUT 2 TT 2	TUT 2: TT 2: Planes in 3D, Space curves and tangent lines
4	27-Jul	Thu	9.1, 9.4	[9.4] Functions of 2 variables: Level curves (contours), level surfaces, Partial derivatives (interpretation as slopes in x-, y-direction)
5	31-Jul	Mon	9.4, 9.5	[9.4] functions of 2 var's, functions of 3 var's, Chain rule for partial derivatives, [9.5] Grad in (x,y,z) as an operator, one example, Interpretation of grad as maximum slope
	2-Aug	Wed	TUT 3 TT 3	TUT 3: TT 3: Level curves, directional derivative, and the gradient
6	3-Aug	Thu	9.4, 9.5	[9.4] functions of 2 var's, functions of 3 var's, Chain rule for partial derivatives, [9.5] Grad in (x,y,z) as an operator, one example, Interpretation of grad as maximum slope
7	7-Aug	Mon	9.5, 9.6	[9.5] Volume functions and contour surfaces, grad is normal to a contour (2D, then 3D). [9.6] Tangent planes to surfaces, MATLAB DEMO tangent plane
	9-Aug	Wed		PUBLIC HOLIDAY - WOMENS DAY
8	10-Aug	Thu	9.6, 9.7	[9.7] Vector fields, Divergence, Curl. MATLAB DEMO vector fields
9	14-Aug	Mon	9.7	[9.7] Flux, interpretation of divergence, more examples
	16-Aug	Wed	TUT 4 TT 4	TUT 4: TT4: Tangent planes, Vector fields, Div, Curl
10	17-Aug	Thu	9.8	[9.8] Line Integrals, Work done, Examples Curl: MATLAB Demo: Circulation and curl
11	21-Aug	Mon	9.9	[9.9] Line Integrals Independent of the path: 2D + 3D Exact Differentials, test for, and finding phi, 3D path independent integration, Examples
	23-Aug	Wed	TUT 5 TT5	TUT 5: TT 5: Line integrals
12	24-Aug	Thu	9.9, 9.10	[9.9] Path Independence 3D [9.10] Double integrals in Cartesian Coordinates, Type I and II regions, Short example.
	28-Aug to	1-Sep		ENGINEERING TEST WEEK / INGENIEURS-TOETSWEK
	30-Aug	Wed	TEST 1 08:00	TEST 1: from Z+W the following paragraphs: 7.5, 9.1, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9
				SEPTEMBER HOLIDAYS / VAKANSIE
13	11-Sep	Mon	9.1	[9.10] Double integrals, changing the order, examples
	13-Sep	Wed	TUT 6 TT 6	TUT 6: TT 6: Path independence, Double Integrals in Cartesian

14	14-Sep	Thu	9.10, 9.11	Double integrals :Mass, Centroids and Moments of Inertia of laminas, examples. Double integrals in Polar coordinates.
15	18-Sep	Mon	9.12	Green's Theorem: two examples done both ways, Partial proof of Green's theorem
	20-Sep	Wed	TUT 7 TT 7	TUT 7: TT 7: Double Integrals in Polar, Green's theorem
16	21-Sep	Thu	9.13	Surface Integrals: derivation of the surface area differential, Examples
	25-Sep	Mon		PUBLIC HOLIDAY - (DAY AFTER HERITAGE DAY)
	27-Sep	Wed	TUT 8 TT 8	TUT 8: TT 8: Surface integrals
17	28-Sep	Thu	9.13	More surface integrals, Flux through surface
18	29-Sep	Fri	9.14	MONDAY TIMETABLE: [9.14] Stokes' Theorem: Green vs Stokes, Two examplee: verification of Stokes
19	2-Oct	Mon	9.14	Stokes theorem, more examples, Stokes, partial proof. Summary of Grad, Div, Curl, Green, Stokes, and Div-theorem
	4-Oct	Wed	TUT 9 TT 9	TUT 9: TT 9: Stokes's theorem
20	5-Oct	Thu	9.15	[9.15] Triple integrals, formulation, Example (Pr. 2), Changing the order of integration.
21	9-Oct	Mon	9.15	Introduction to Cylindrical coords, Examples of triple integration
	11-Oct	Wed	TUT 10 TT 10	TUT 10: TT 10: Triple integrals (Cartesian)
22	12-Oct	Thu	9.15	Introduction to Spherical Coords: Formulae, Examples of triple integration MATLAB demo of coordinate systems
23	16-Oct	Mon	9.16	The Divergence Theorem, Introduction, Confirm with example
	18-Oct	Wed	TUT 11 TT 11	TUT 11: TT 11: Triple integrals (Cylindrical+Spherical)
24	19-Oct	Thu	9.16	The Divergence Theorem, Example (Pr. 4), Short proof. Confirm with examples in cylindrical and spherical
	20-Oct	Fri	TUT 12	A tuttest will be supplied (on the divergence theorem) to be done by yourself. It will not be marked.
				EXAMINATION PERIOD STARTS / EKSAMENTYD BEGIN
T2	2-Nov	Thu	TEST 2 9:00	TEST 2: Covers all the work, but with greater emphasis on the work done in the fourth term.
T3	23-Nov	Thu	TEST 3 9:00	TEST 3: Covers all the work with equal emphasis on everything that was covered.