Orthogonal matrices; diagonalization of symmetric real matrices.
Properties of orthogonal endomorphisms of $\mathbf{R}^2$ and $\mathbf{R}^3$.

Plane curves; tangent vector at a point, metric properties of plane curves (arc length, curvature).
Surfaces in **Rm1 131.2 682 Tm0 g0 G 0 2 Tc [Rm1 131.2 682 Tm0 g0 G 0 2 Tc [Rm1 101 0 g 7ur)-(v)17(a)-4**

First and second principles of thermodynamics

Phy

as well as $f(g(x))$.

Rules of derivation of the product and the quotient of two functions of a real variable.

Primitives of the basic functions above.

Integration by parts, $\int u'v = uv - \int uv'$.

Compute

Multiple integrals. Stokes, Gauss ï Ostrogradski theorems.

Second order linear and homdeo ereaqoaos witSostat coe

Linear algebra

The definitions of a stationary flow, of an incompressible flow ($\vec{\nabla}.\vec{v} = 0$ in all points), of a non-

distribution of the electrostatic potential between the plates of a planar capacitor should be known.

The concept of electric dipole, the field created by a dipole at a large distance, as well as the interaction energy of a permanent dipole $\vec{d}$ with an electric field $\vec{E}$, $-\vec{d}.\vec{E}$, should be known to

the applicants, as well as the definition of the polarization density vector where *V* is the volume.

where *A* is a normalization factor. The equipartition theorem results :

$< v_x^2 >=< v_y^2 >=< v_z^2 >= \frac{k_B T}{m}$ as well as [illegible] and [illegible].

Collisions against walls. Relationship between pressure and mean square velocity.