$$\Rightarrow \#(V \cdot \mathbb{P}^{N-n}) = \int_M c_1(L)^n = \deg V \in \mathbb{Z}$$

(($\#(i_E(M) \cdot \mathbb{P}^{N-n}) = \#(M \cdot i_E^{-1}(\mathbb{P}^{N-n})) = \#(i_E^{-1}(\mathbb{P}^{N-n}))$
$= \#(i_E^{-1}(\mathbb{P}^{N-1}) \cap \cdots i_E^{-1}(\mathbb{P}^{N-1})) = \#(\overbrace{D \cap \cdots \cap D}^{n})$.
(We should assume that i_E is injective, i.e. embedding.))) 1995. 6. 29. If we count the multiplicity, then we need not assume i_E is injective.

A variety $V \subset \mathbb{P}^n$ is called normal if the linear system on V giving the embedding $i : V \longrightarrow \mathbb{P}^n$ is complete, that is, if the restriction map

$$H^0(\mathbb{P}^n, \mathcal{O}(H)) \longrightarrow H^0(V, \mathcal{O}(H)) \quad \text{is surjective.}$$

Note that any smooth hypersurface $V \subset \mathbb{P}^n$ is normal: from the exact sheaf sequence

$$0 \longrightarrow \mathcal{O}_{\mathbb{P}^n}(H-V) \longrightarrow \mathcal{O}_{\mathbb{P}^n}(H) \xrightarrow{r} \mathcal{O}_V(H) \longrightarrow 0$$

we have an exact sequence of cohomology groups

$$H^0(\mathbb{P}^n, \mathcal{O}_{\mathbb{P}^n}(H)) \xrightarrow{r} H^0(V, \mathcal{O}_V(H)) \longrightarrow H^1(\mathbb{P}^n, \mathcal{O}_{\mathbb{P}^n}(H-V)),$$

but $H^1(\mathbb{P}^n, \mathcal{O}_{\mathbb{P}^n}(H-V)) = H^1(\mathbb{P}^n, \mathcal{O}_{\mathbb{P}^n}((1-d)H)) = 0$

so r must be surjective.

「 If $\deg V = d$, then $V = dH$.
$\Rightarrow H^1(\mathbb{P}^n, \mathcal{O}_{\mathbb{P}^n}(H-V)) = H^1(\mathbb{P}^n, \mathcal{O}_{\mathbb{P}^n}((1-d)H))$

(i) $d > 1$, $(1-d)H$ is negative line bundle.
Assume $n > 1$.